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November 20, 2003

Via Electronic Mail Delivery

Marlene Dortch, Secretary  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

Re: *Ex Parte* Submission, WT Docket 02-55

Dear Ms. Dortch:

Nextel Communications (Nextel™) is pleased to submit the attached filing for the Federal Communications Commission's ("FCC") consideration in WT Docket 02-55, *Improving Public Safety Communications in the 800 MHz Band*.

Attached is a study by Dr. Kostas Liopiros, Founder and Principal of the Sun Fire Group. Dr. Liopiros holds a Ph.D. in electrical engineering, an M.A. in mathematics and an M.S. in electrical engineering from Princeton, and a B.S. in electrical engineering and mathematics from Lehigh University. Dr. Liopiros has extensive consulting and senior management experience in spectrum management, frequency planning and coordination, and licensing issues. He has served as an advisor to the Secretary of Defense for Telecommunications and Command, Control and Communications Policy. Dr. Liopiros prepared the attached study with the input of Nextel and with information based on the record in this proceeding and other sources.

Dr. Liopiros's study shows that the demonstrated public benefits of the Consensus Plan – eliminating interference that jeopardizes the lives, safety and effectiveness of our nation's first-responders and improving public safety communications – are substantial and recurring. These benefits far outweigh the one-time implementation costs of the Consensus Plan. Dr. Liopiros's study further demonstrates that the spectrum swaps proposed by the Consensus Plan are comparable in value and will in no way give any licensee a "windfall" benefit.

*Ms. Marlene Dortch*

*November 20, 2003*

*Page 2 of 2*

Nextel has forwarded a copy of this filing to the attached list of FCC personnel. Accordingly, pursuant to Section 1.1206 of the Commission's Rules, Nextel requests that a copy of this letter and Dr. Liopiros's study be placed in the Commission's docket.

Respectfully submitted,

/s/ Lawrence R. Krevor

Lawrence R. Krevor  
Vice President – Government Affairs

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# **The Consensus Plan: Promoting the Public Interest A Valuation Study**

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Prepared for  
Nextel Communications, Inc.

20 November 2003

## ***Kostas Liopiros***

Kostas Liopiros is founder and principal of the Sun Fire Group, technology management consultants based in Alexandria, VA. He holds a Ph.D. in electrical engineering, an M.A. in mathematics and an M.S. in electrical engineering from Princeton and a B.S. in electrical engineering and mathematics from Lehigh University. Dr. Liopiros has over 25 years of experience in consulting and senior management in the telecommunications, media and electronics industries. He has advised clients on spectrum management, frequency planning and coordination, and licensing, and represented them before the FCC, NTIA, the Department of Commerce, and NASA. He previously served as an advisor to the Secretary of Defense for Telecommunications and Command, Control and Communications Policy.

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# **THE CONSENSUS PLAN: PROMOTING THE PUBLIC INTEREST AND MAKING NEXTEL WHOLE FOR ITS CONTRIBUTIONS**

## ***A Valuation of the Consensus Plan Spectrum Swaps and Public Benefits***

### **Executive Summary**

Numerous public safety organizations, major private wireless communications organizations, and Nextel Communications, Inc. (“Nextel”) have joined together in support of the “Consensus Plan for 800 MHz Realignment” (the “Consensus Plan”) in the Federal Communication Commission’s (the “Commission”) ongoing rulemaking to improve public safety communications at 800 MHz.<sup>1</sup> The Consensus Plan is supported by the nation’s leading public safety organizations: the International Association of Chiefs of Police (“IACP”), the International Association of Fire Chiefs (“IAFC”), the International Municipal Signaling Association (“IMSA”), the Major Cities Chiefs Association (“MCC”), the Major County Sheriffs’ Association (“MCSA”), and the Association of Public Safety Communications Officials, International (“APCO”).

This paper identifies the substantial and ongoing societal benefits of Consensus Plan implementation, and explains how these important public benefits far outweigh any theoretical cost to the federal government in terms of forgone spectrum auction revenues. These public benefits – eliminating interference that jeopardizes the lives, safety and effectiveness of our nation’s first-responders and providing more spectrum for emergency communications – go to the heart of the Commission’s statutory mandate to promote the “safety of life and property through the use of wire and radio communication.”<sup>2</sup>

The Consensus Plan proposes realigning the 800 MHz band to eliminate the underlying cause of serious interference to public safety communications systems – the mixed, interleaved and adjacent licensing of incompatible low-site cellular and high-site

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<sup>1</sup> *Improving Public Safety Communications in the 800 MHz Band; Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels*, Notice of Proposed Rulemaking, 17 FCC Rcd 4873 (2002) (“NPRM”).

<sup>2</sup> 47 U.S.C. § 151.

public safety and private wireless systems. Under the Consensus Plan, Nextel would surrender 10.5 MHz of spectrum to make realignment possible and to provide much needed additional spectrum for public safety communications at 800 MHz where the vast majority of these communications systems already operate. In return, Nextel would receive 10 MHz of encumbered replacement spectrum in the 1.9 GHz band, 1910-1915/1990-1995 MHz (the “G Block”). Nextel would also contribute over \$1 billion to retune public safety and private wireless incumbents, as well as its own costs of retuning its network in accordance with the Consensus Plan.<sup>3</sup>

The record in this proceeding includes a number of spectrum valuations offered to support or to oppose the spectrum exchange and the Consensus Plan. This paper analyzes the comparative value of the Consensus Plan spectrum exchange by estimating the value of the subject spectrum using three different approaches: a direct comparison of spectrum, a comparison of auction and acquisition prices for comparable spectrum, and a comparison of secondary market transactions for comparable spectrum. Under each of these analyses, the Consensus Plan provides a fair and equitable spectrum exchange for all affected parties. These analyses demonstrate that the exchange will not confer a spectrum value “windfall” on Nextel, as asserted by its wireless communications competitors.<sup>4</sup> In any case, analyzing whether or not Nextel would gain a windfall is in many ways a “red herring.” The windfall arguments of Consensus Plan opponents completely ignore the substantial societal benefits that the Consensus Plan will deliver to the American people. These benefits will significantly enhance public safety

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<sup>3</sup> Under the Consensus Plan, Nextel would spend over \$1 billion to: (1) provide up to \$850 million to fund the costs of relocating incumbent private wireless and public safety systems to the realigned 800 MHz band; (2) provide \$150 million to equip its base stations with filtering devices necessary to provide the interference protections specified in Appendix F of the Consensus Plan; (3) potentially spend additional funds to cover other costs it may incur to ensure sufficient network capacity in transitioning its operations to the new band plan; and (4) cover its share of the costs of relocating the BAS and other incumbents from the G Block spectrum. *See infra*, section 2.3.1.

<sup>4</sup> For example, Verizon Wireless substantially overvalues the G Block, while substantially undervaluing the spectrum Nextel would contribute to enable realignment, as discussed further herein. *See infra*, pages 15-19, 22-25.



communications, which in turn will save lives and reduce losses due to crime, fire, terrorism and other similar occurrences.

Economic losses in the United States due to crime and fire are estimated at well over \$1 trillion a year. Even a small reduction in these costs resulting from improved public safety communications will produce *public benefits on the order of billions of dollars on a recurring basis year after year*. But even more importantly, eliminating interference and improving public safety communications will save lives – both those of first-responders and the public they serve.

In this proceeding, the Commission must consider whether the public benefits of eliminating interference and facilitating improved public safety communications through the Consensus Plan outweigh the costs of achieving these results – both to those it regulates and to the government itself. This paper demonstrates that the substantial recurring public benefits of the Consensus Plan far outweigh its one-time implementation costs. The paper further demonstrates that the spectrum exchanges proposed by the Consensus Plan are essential to achieve these public benefits and would not unreasonably benefit Nextel or any other private party.

**1. The FCC Should Focus on the Consensus Plan’s Substantial Public Benefits Rather than on Valuations of the Spectrum Swaps**

**1.1 The *Public Interest* Issues Before the FCC: Remedying Interference to Public Safety Systems and Ensuring Sufficient Spectrum for Public Safety Communications**

A substantial record has been developed in this proceeding concerning the spectrum swaps necessary to effectively realign the 800 MHz band and thereby eliminate the public safety interference problem. Attempting to definitively estimate the relative values of the spectrum swaps necessary to effectuate the Consensus Plan, however, essentially misses the whole point of this rulemaking. The valuation arguments of Nextel’s competitors are a trap intended to misdirect the Commission’s focus from solving the very real and very urgent problems facing public safety communicators.

The Commission's public interest analysis should focus on the costs and benefits of the Consensus Plan in terms of remedying the 800 MHz interference problem and promoting improved public safety communications capabilities. Indeed, as stated in Section 1 of the Communications Act, Congress created the FCC "for the purpose of promoting safety of life and property through the use of ... radio communication."<sup>5</sup> Opponents of the Consensus Plan – including many of Nextel's competitors – argue that Nextel will receive a windfall under the Plan. As Section 2 conclusively demonstrates, these arguments are factually wrong. But more fundamentally, they are irrelevant to the Commission's public interest analysis.

Consensus Plan opponents ask the Commission to reject the Plan because it may indirectly affect their relative spectrum positions and their corporate interests. They totally ignore the pressing *public interest* issue before the Commission: remedying interference to public safety systems in the 800 MHz band and enhancing public safety communications. As the leading local law enforcement organizations have made clear, "[t]his is about 800 MHz *Public Safety Interference*. It is not about the corporate interests of Nextel-Cingular-Verizon-AT&T-Sprint-Utilities."<sup>6</sup>

The Consensus Parties, composed of the leading public safety organizations (including the International Association of Chiefs of Police, the International Association of Fire Chiefs, and APCO) and representing over 90% of 800 MHz Land Mobile Radio band licensees, are focused on solving the public safety communications issues in this proceeding rather than individual corporate self-interest. They have submitted evidence demonstrating that interference to public safety systems in the 800 MHz band is a widespread, nationwide problem that is growing increasingly worse even after several years of applying Best Practices to mitigate the problem.<sup>7</sup> Incidents of interference

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<sup>5</sup> 47 U.S.C. § 151.

<sup>6</sup> Letter from Harlin McEwen, Chairman, IACP Communications Technology Committee, to Marlene Dortch, FCC Secretary, WT Docket No. 02-55, Attachment at 3 (Aug. 27, 2003; filed Aug. 28, 2003) ("Aug. 27 Public Safety Letter").

<sup>7</sup> *Ex Parte* Submission of the Consensus Parties, WT Docket No. 02-55, at 24-26 (Aug. 7, 2003).

prevent first-responders and other public safety officials from being able to communicate effectively on a real-time basis. Such communications are, of course, critical to providing effective public safety services. Without effective public safety communications, lives will be lost and property destroyed.

There is also strong evidence in the record regarding the need to allocate more spectrum for public safety communications, especially for interoperable communications that allow first responders from different agencies and jurisdictions to communicate with each other during emergencies.<sup>8</sup> According to an independent task force report sponsored by the Council on Foreign Relations and issued one year after September 11,

[i]n virtually every major city and county in the United States, no interoperable communications system exists to support police, fire departments, and county, state, regional, and federal response personnel during a major emergency. Radio frequencies are not available to support the post-incident communication demands that will be placed on them, and most cities have no redundant systems to use as backups.<sup>9</sup>

These public safety communications problems contributed to the report's finding that "America remains dangerously unprepared to prevent and respond to a catastrophic

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<sup>8</sup> See, e.g., Final Report of the Public Safety Wireless Advisory Committee to the FCC and NTIA, WT Docket No. 96-86, Executive Summary at 2 (Sept. 11, 1996) ("[U]nless immediate measures are taken to alleviate spectrum shortfalls and promote interoperability, Public Safety agencies will not be able to adequately discharge their obligation to protect life and property in a safe, efficient, and cost effective manner."); "First Responder Interoperability: Can You Hear Me Now?", Testimony of Marilyn Praisner, TeleCommUnity and The National Association of Counties, Before the Subcommittees on National Security, Emerging Threats, and International Relations, and Technology, Information Policy, and Intergovernmental Relations, U.S. House of Representatives, at 10 (Nov. 6, 2003) (stating that an "additional 73.5 MHz is needed now to meet [public safety] interoperability and capacity needs"); Comments of Nextel, WT Docket No. 02-55, at 32-40 (May 6, 2002) (summarizing extensive evidence regarding strong need for the FCC to allocate additional spectrum to public safety communications).

<sup>9</sup> "America – Still Unprepared, Still in Danger," Report of an Independent Task Force Sponsored by the Council on Foreign Relations, at 14 (Oct. 17, 2002) (task force chaired by Gary Hart and Warren Rudman) (*available at*: <[http://www.cfr.org/pdf/Homeland\\_TF.pdf](http://www.cfr.org/pdf/Homeland_TF.pdf)>).

terrorist attack on U.S. soil. In all likelihood, the next attack will result in even greater casualties and widespread disruption to American lives and the economy.”<sup>10</sup>

## **1.2 Americans Demand an Effective Government Response to Public Safety Communications Problems**

Americans are gravely concerned about the serious impediments to effective public safety communications and expect the government to take effective action. A recent public opinion study by the Luntz Research Companies (attached as Appendix A) found that the American people clearly expect the government to be responsible for protecting their safety. Fully 73% of the country agrees that:

The primary role of government is to protect the people from harm. If our leaders cannot guarantee that emergency response teams have the technology to meet disaster situations, they have not been doing their jobs.<sup>11</sup>

Yet, two years after September 11, Americans still lack confidence in the government’s ability to respond effectively to an emergency. Just one-third of Americans believe that their local first responders are “very effective” at responding to a natural disaster and fewer than one in four Americans believe that either national or local first responders are “very effective” at responding to a terrorist attack.<sup>12</sup> Interference to public safety communications and the inadequacy of dedicated public safety spectrum is a significant impediment to effective emergency response and to assuring Americans that the government is doing its job to protect them. As a nation, we owe it to our first responders to provide them every available tool to allow them to do their jobs effectively.

The Luntz study also found that two thirds of Americans agree with the following statement:

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<sup>10</sup> *Id.* at 1.

<sup>11</sup> The Luntz Research Companies, “America Talks Interoperability: Why We Can’t Wait,” at 4 (2003).

<sup>12</sup> *Id.* at 3.

If the technology exists to help first responders communicate more effectively with each other, the government should invest in the technology regardless of the cost.<sup>13</sup>

This finding is extraordinary because it shows that Americans support government investment in improved public safety communications *regardless of the cost*. This belief is very instructive in evaluating the societal costs of not curing CMRS – public safety interference. It indicates that Americans will hold government responsible for failing to implement technology that can improve the effectiveness of first responder communications, and thereby help to meet the government’s primary responsibility of protecting the populace from harm. The Commission can meet its obligation to the American public, and can do so without the need for any governmental agency to spend a single penny to make it happen.

### **1.3 The Consensus Plan: Providing Very Substantial Public Benefits**

The Consensus Plan would permit the Commission to meet its core responsibility of promoting safety of life and property through the provision of radio communications. It does so by providing an effective remedy to public safety interference in the 800 MHz band and allocating additional spectrum for public safety communications. This would result in very substantial public benefits, while the public costs of the Consensus Plan would be limited to the government’s somewhat speculative forgone revenue from an auction of the G Block, which is heavily encumbered by Broadcast Auxiliary Service (“BAS”) licensees.

These costs should not deter the Commission from adopting the Consensus Plan. First, the Communications Act expressly provides that, in assigning rights to the spectrum, “the Commission may *not* base a finding of public interest, convenience, and necessity ... on the expectation of Federal revenues from the use of a system of competitive bidding.”<sup>14</sup> Second, the public benefits of the Consensus Plan far outweigh

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<sup>13</sup> *Id.* at 5.

<sup>14</sup> 47 U.S.C. § 309(j)(7)(A) (emphasis added). See *In the Matter of Northcoast Communications, L.L.C.*, Order, 16 FCC Rcd 15637, ¶ 5 (2001) (“By statute, the Commission may not base a finding of public interest, convenience, and necessity with respect to licensing matters on the expectation of federal revenues raised from spectrum auctions.”).

its costs. As described below, these benefits, although difficult to quantify, are extraordinary and ongoing.

### **1.3.1 Saving Lives**

The Consensus Plan enjoys the support of every leading public safety organization as well as over 40 other public safety agencies and local government representatives.<sup>15</sup> Over 500 individual members of the International Association of Chiefs of Police and the Major Cities Chiefs Association recently endorsed the Consensus Plan urging the Commission to adopt it.<sup>16</sup> This endorsement by “rank and file” members of the public safety community provides “further affirmation of the wide support of the Consensus Plan from the public safety community.”<sup>17</sup> These public safety parties have played an active role in the FCC’s 800 MHz proceeding because they understand the threat that interference and poor communications pose to first responders and the public. As the public safety community has made clear:

Public safety is all about you and your families. Our job is to protect your life and safety. We cannot do that unless we have safe and reliable communications. Communications interference puts the public and our first responders at risk.<sup>18</sup>

By addressing this risk, the Consensus Plan will save lives. It would do this by providing a proactive, effective remedy to the 800 MHz interference problem and

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<sup>15</sup> Attached as Appendix B is a list of Consensus Plan supporters, including numerous public safety and local government agencies.

<sup>16</sup> See Letter from Harlin McEwen, Chairman, Communications and Technology Committee, IACP, to Michael Powell, FCC Chairman, WT Docket No. 02-55 (Nov. 3, 2003; filed Nov. 6, 2003).

<sup>17</sup> *Id.*

<sup>18</sup> Aug. 27 Public Safety Letter (*ex parte* presentation at 10).

providing additional public safety spectrum to promote interoperability and sufficient communications capacity during a crisis. As September 11, the Oklahoma City bombing, and Hurricane Isabel all demonstrated, emergencies place enormous strains on public safety communications, but it is in such moments that effective communications make the biggest difference in saving lives. Ensuring interference-free and effective public safety communications will help avoid situations where a battalion chief is unable to radio a command for firefighters to evacuate a building on the verge of collapse, or a police officer is unable to radio for backup.

Capturing the true value of saving a life in such situations cannot be measured in monetary terms.<sup>19</sup> But it is a substantial public benefit that outweighs all other considerations in this proceeding. The very first sentence of the Commission's *NPRM* states that the "Commission has long recognized that the nation's public safety community requires effective radio communications systems free of harmful interference if public safety agencies are to adequately protect the safety of lives and property." As the Commission has stated elsewhere, ensuring that public safety agencies have the communications tools necessary to save lives is a "top priority."<sup>20</sup>

Congress made public safety communications the Commission's top priority in 1937 when it amended Section 1 of the Communications Act to add a provision stating that one of the reasons the FCC was created was for the "purpose of promoting the safety of life and property through the use of wire and radio communication."<sup>21</sup> Congress has reiterated this mandate on subsequent occasions, stating in legislative history to a 1982

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<sup>19</sup> Specifying a dollar equivalent for human losses is a delicate and controversial subject. However, a 2003 study estimates that the total dollar equivalent for all deaths and injuries due to fires in the United States in 2001 was \$41.7 - \$56.5 billion; the higher total includes the terrorist attacks of September 11, 2001. John R. Hall, Jr., "The Total Cost of Fire in the United States," National Fire Protection Association (2003). The total dollar impact of fire in the United States in 2001 ranges from \$186 - \$305 billion; again, the higher amount includes the September 11 attacks.

<sup>20</sup> *In the Matter of Future Public Safety Telecommunications Requirements*, Order, PR Docket No. 84-232, FCC 85-329, 1985 FCC LEXIS 2872 (released Aug. 1, 1985) (quoting H.R. Report No. 356, 98<sup>th</sup> Cong., 1<sup>st</sup> Sess. 27 (1983)).

<sup>21</sup> Pub. L. 75-97, enacted May 20, 1937, 50 Stat. 189.

amendment to the Communications Act that the “Commission should be ever vigilant to promote the private land mobile spectrum needs of police departments and other public agencies which need to use such radio services to fulfill adequately their obligation to protect the American public.”<sup>22</sup> Promoting safety of life goes to the very core of the Commission’s responsibility under the Communications Act.

### **1.3.2 Reducing Economic Loss Due to Terrorism, Crime, and Other Disasters**

The United States sustains well over \$1 *trillion* a year in economic losses from crimes and fires.<sup>23</sup> This represents a per capita total of more than \$4,000 per year. The Consensus Plan could reduce this annual loss by remedying 800 MHz interference and providing additional public safety spectrum. This would significantly enhance public safety communications, which would translate into improved operational effectiveness of public safety personnel in responding to emergencies that threaten to cause damage. Even a small improvement in the effectiveness of public safety operations can lead to significant societal savings. For example, if improved public safety communications reduced the societal loss from crime and fire by a mere one-tenth of one percent, the nation would save over \$1 billion every year. The present value of this benefit would be enormous – on the order of billions of dollars. Moreover, this would be a *recurring* public benefit, reducing losses from crime and other emergencies on a yearly basis, in contrast to the *one-time* costs of implementing the Consensus Plan.

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<sup>22</sup> Conf. Report No. 97-765, Aug. 19, 1982, at 52.

<sup>23</sup> See David A. Anderson, “The Aggregate Burden of Crime,” 42 J.L. & Econ. 611 (Oct. 1999); John R. Hall, “The Total Cost of Fire in the United States,” National Fire Protection Association (2003). Anderson estimates the direct and indirect costs of every type of crime for the entire nation to exceed \$1 trillion. He includes expenses commonly associated with unlawful activity (direct costs such as victim losses, crime prevention, judicial costs) as well as the opportunity costs of victims, criminals’ and prisoner’s time, the fear of being victimized and the cost of private deterrence. For purposes of the instant proceeding, we have excluded the costs of “white collar crime” as that category may be least impacted by the benefits of improved public safety communications; including these costs raises the burden of crime alone to more than \$1.7 trillion. We have aggregated the total costs of fires in the U.S. with the total annual burden of crime to produce the \$1 trillion dollar estimate referred to above. This is a conservative estimate as the crime figures are from 1999 and earlier.



#### **1.4 Case-by-Case Mitigation Would Impose Ongoing Burdens on Public Safety Systems**

Over the past several years, public safety agencies throughout the country have sought to mitigate CMRS interference to their 800 MHz radios by applying a set of “Best Practices” adopted by the public safety community and the wireless industry in 2001. These Best Practices involve identifying the locations of interference incidents, identifying the wireless carrier or carriers contributing to the interference, and negotiating with these carriers concerning ways to mitigate the problem. Not only have these case-by-case mitigation efforts proven to be ineffective – public safety interference has only *increased* since licensees began using Best Practices – they impose substantial burdens on public safety agencies in terms of lost staff time and direct financial costs. These costs are being borne by taxpayers, as none of the proponents of continued Best Practices mitigation efforts has offered any plan to fund the resulting ongoing public safety costs.

The Cellular Telecommunications and Internet Association (“CTIA”) and the Utilities Telecom Council (“UTC”) support continuing these case-by-case mitigation efforts indefinitely.<sup>24</sup> Their approach would continue to saddle public safety agencies; *i.e.*, state and local governments, with the unfunded costs and burdens of tracking interference and negotiating mitigation efforts as each incident arises.<sup>25</sup> They would also require public safety parties to fund such efforts where commercial carriers determine that “‘receiver-generated’ [intermodulation] interference” is the cause of the problem.<sup>26</sup>

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<sup>24</sup> See Letter from Diane Cornell, CTIA, to Marlene Dortch, FCC Secretary, WT Docket No. 02-55 (May 29, 2003).

<sup>25</sup> See Letter from Alan Tilles, Counsel to the City and County of Denver, to John Muleta, Chief, Wireless Telecommunication Bureau, FCC, WT Docket No. 02-55 (Nov. 7, 2003) (estimating that the City and County of Denver has expended approximately \$130,000 in staff and engineering resources in seeking to mitigate 800 MHz interference); Anne Arundel County Application for Review, WT Docket No. 02-100, at 6 (Aug. 6, 2003) (estimating that Anne Arundel County has spent “hundreds of thousands of dollars of its own money and employee time” on interference mitigation efforts over the past several years); *Ex Parte* Submission of the Consensus Parties, WT Docket No. 02-55, at 32-33 (Aug. 7, 2003) (describing how interference mitigation efforts impose unfunded burdens on public safety agencies).

<sup>26</sup> See Letter from Diane Cornell, CTIA, to Marlene Dortch, FCC Secretary, WT Docket No. 02-55, Attachment at 5 (May 29, 2003).

CTIA's support of continued case-by-case Best Practices fails to provide an effective remedy to 800 MHz interference, and would impose ongoing costs on governments that cannot afford it. As CTIA itself recently observed with regard to the costs of mitigating public safety interference: "This is a difficult time for state and local governments, and asking for more money is not feasible."<sup>27</sup> In sharp contrast, the Consensus Plan is the only plan that provides full funding for eliminating interference and improving public safety communications.

The Public Safety community opposes the UTC/CTIA proposal because it would not remedy 800 MHz interference and it would impose unfunded burdens on public safety. The National Public Safety Telecommunications Council ("NPSTC") has stated that

In contrast to the underlying premises of the Consensus Plan to proactively address the circumstances which give rise to the interference, to maintain Public Safety communications systems while frequencies are being modified, and to finance the cost to Public Safety users to achieve the transition, the [UTC/CTIA proposal] puts Public Safety communications officers and the public at continuing risk of harmful interference and imposes unfunded financial obligations on Public Safety.<sup>28</sup>

The Public Safety community has also opposed Motorola's suggestion that a series of technical measures in conjunction with Best Practices will address the interference problem without realigning the 800 MHz band. According to the leading public safety organizations, Motorola's plan is "not a 'technological silver bullet' that would solve the 800 MHz interference problem."<sup>29</sup> Rather, it would be "largely

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<sup>27</sup> CTIA Press Release, November 5, 2003 (*available at*: <[http://www.wow-com.com/news/press/body.cfm?record\\_id=1343](http://www.wow-com.com/news/press/body.cfm?record_id=1343)>).

<sup>28</sup> Letter from Marilyn Ward, NPSTC, to Tara Shostek, Irwin, Campbell & Tannenwald, at 2 (June 11, 2003) (filed in WT Docket No. 02-55 on July 8, 2003).

<sup>29</sup> Statement of APCO, IAFC, IACP, MCC, NSA, and MCSA (May 16, 2003).

‘reactive’ to interference problems as they occur” and would involve “significant and costly [public safety] system upgrades.”<sup>30</sup>

By realigning the 800 MHz band and proposing clear technical rules to govern operations in the realigned band, the Consensus Plan removes the underlying causes of 800 MHz interference and eliminates the need for public safety systems to engage in case-by-case mitigation efforts to control the problem. The ongoing burdens associated with these efforts would consequently be eliminated. Public safety licensees also would not bear the cost of relocating to the new band plan, as Nextel’s financial commitment under the Consensus Plan covers these costs.

## **2. The Proposed Spectrum Exchange Involves Spectrum of Comparable Value and Will Not Give Nextel a Windfall**

Notwithstanding the above, the Commission is faced with submissions in this proceeding that offer a variety of monetary estimates of the value of the Consensus Plan spectrum exchange. Nextel’s competitors filed most of these submissions claiming that the Consensus Plan would confer on Nextel disproportionate value.<sup>31</sup> As noted above, these arguments completely ignore the public benefits of eliminating CMRS – public safety interference and improving public safety communications. They also suffer from numerous factual errors, faulty assumptions and deficient methodologies that undercut their validity. The analyses set forth in Section 2 avoid these flaws and apply a consistent set of reasonable assumptions to demonstrate that the 1.9 GHz encumbered G Block spectrum is comparable in value to Nextel’s contributions under the Consensus Plan.

### **2.1 A “kHz for kHz” Comparison**

Nextel would not receive a net gain in spectrum under the Consensus Plan. In fact, it would suffer a net loss of 0.5 MHz of spectrum, *and* would make a financial

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<sup>30</sup> *Id.*

<sup>31</sup> See, e.g., Letter from John Scott, Verizon Wireless, to Marlene Dortch, FCC Secretary, WT Docket No. 02-55 (Oct. 27, 2003) (“Verizon Study”); Letter from Diane Cornell, CTIA, to Marlene Dortch, FCC Secretary, WT Docket No. 02-55 (July 9, 2003).

contribution exceeding \$1 billion to implement it. Viewed from a “kHz for kHz” perspective, therefore, Nextel certainly would not receive a windfall of any sort.

Relying on a “kHz for kHz” analysis provides a concrete, objective, reliable method for comparing the relative values of spectrum being exchanged under the Consensus Plan. To be sure, there may be qualitative differences in the bands being exchanged. Attempting to estimate these differences in monetary terms is an inherently speculative enterprise dependent on constantly changing facts, marketplace dynamics and numerous assumptions. As the Commission has recognized, the market for spectrum is highly volatile.<sup>32</sup> Spectrum value volatility is caused by the wide range of variable factors, including the supply of comparable alternative spectrum at any given point in time, market conditions for the service to be provided over the spectrum, the cost of capital, technological factors, the propagation characteristics of the spectrum band in question, and the extent the spectrum is presently encumbered by other users. Calculating a static estimate of the relative values of the spectrum involved in the Consensus Plan, therefore, is subject to a significant degree of uncertainty.

The Commission’s C and F Block PCS auctions are good examples of the volatility of spectrum values. As Verizon Wireless described in comments filed in 2002, “the spectrum NextWave won in the C and F Block auctions was valued at \$4.7 billion by NextWave at the close of those auctions, at approximately \$1 billion by the bankruptcy court only six months later, and at more than \$16 billion in January 2001 by the participants in Auction 35.”<sup>33</sup> According to an expert report Verizon Wireless submitted, the value of this spectrum fell dramatically once again following Auction 35, falling 56% from January 2001 to July 2002.<sup>34</sup>

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<sup>32</sup> *Commission Seeks Comment on Disposition of Down Payments and Pending Applications for Licenses Won During Auction No. 35*, Public Notice, 17 FCC Rcd 17079, 17081 (2002).

<sup>33</sup> Comments of Cellco Partnership, d/b/a Verizon Wireless, WT Docket No. 02-276, at n. 31 (Oct. 11, 2002).

<sup>34</sup> *Id.*, Attachment B, at 26.

Aside from avoiding the pitfalls inherent in trying to estimate the monetary value of spectrum, a kHz for kHz comparison is a fair and reasonable approach because the relative advantages and disadvantages of the different spectrum bands being exchanged in the Consensus Plan are likely to offset each another. Of course, opponents of the Consensus Plan attempt to dispute this, arguing that the 1.9 GHz spectrum is more valuable. For example, Verizon Wireless has submitted a study that argues that 5 x 5 MHz of contiguous, paired spectrum in the 1.9 GHz band is more valuable than the non-contiguous channels Nextel would be giving up at 700, 800, and 900 MHz.<sup>35</sup> It maintains that contiguous spectrum is better suited to provide advanced wireless services, and that carriers operating on spectrum adjacent to the PCS band could take advantage of lower equipment costs resulting from a competitive PCS equipment supplier market.

Verizon Wireless's rationale for heavily discounting the value of Nextel's spectrum does not withstand scrutiny. Verizon Wireless based its spectrum valuation analysis on the assumption that Nextel's surrendered spectrum is impaired and has limited use; therefore it devalued the spectrum on an assumed fair market value basis. Verizon Wireless based its impairment valuation on the assertion that Nextel's iDEN® technology is inferior to CDMA or similar broadband technologies that could be deployed at 1.9 GHz based on: (1) a purely theoretical capacity comparison of the two technologies; (2) the assertion that Nextel's non-contiguous spectrum cannot be used for the wideband digital technologies necessary to "deliver high speed data services that CMRS operators are now beginning to provide and are planning to expand in the near future,"<sup>36</sup> and (3) the assumption that Nextel is not fully utilizing its 900 MHz spectrum.<sup>37</sup>

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<sup>35</sup> Verizon Wireless Study.

<sup>36</sup> *Id.* at i. Verizon Wireless also assumed that the 1.9 GHz spectrum Nextel would receive under the Consensus Plan is uniquely suitable for next generation broadband networks and should be valued at a premium relative to the spectrum Nextel would surrender. As discussed *infra*, section 2.2, this argument is also unfounded.

<sup>37</sup> *Id.* at 43-63.

The facts, however, belie Verizon Wireless's effort to discount the value of Nextel's current spectrum holdings. Spectrum value is a function of how effectively a carrier can use its spectrum. Nextel has proven that it can efficiently and effectively operate on its 800 MHz and 900 MHz spectrum by consistently delivering industry-leading financial performance. For example, Nextel's 3<sup>rd</sup> quarter 2003 Operating Income Before Depreciation and Amortization ("OIBDA") margin of 43% on service revenues is the highest of all U.S. nationwide domestic wireless carriers. In a misleading attempt to obscure this fact, Verizon Wireless argues that Nextel's figures for gross Property, Plant and Equipment ("PP&E") per subscriber and net PP&E per subscriber are 36% and 41% higher, respectively, than the average PCS and cellular carrier.<sup>38</sup> These metrics, however, do not support Verizon Wireless's conclusion that Nextel's technology is less efficient, or its spectrum less valuable, than its competitors. Verizon Wireless simply chose to use a misleading number. Because Nextel has the industry's highest revenue and usage per subscriber, it obviously must invest more to serve the higher value customers. The more relevant comparison is a carrier's cost to serve a minute of use ("MOU"), not a carrier's cost per subscriber, because average subscriber MOUs vary widely among different carriers. Nextel's gross PP&E per MOU and net PP&E per MOU are actually 4% and 1% lower, respectively, than the cellular and PCS carrier average, indicating *that Nextel's network infrastructure is actually more efficient than the industry average.*<sup>39</sup>

Verizon Wireless also bases its value estimates on its assessment of whether the subject spectrum can be used to provide next generation high speed data services. Although the industry trend has been characterized as gravitating toward high-speed data services, the highest valued use for CMRS spectrum in the U.S. is for voice services. As the chart in Appendix D indicates, next generation high-speed data is projected to provide an insignificant contribution to total industry revenues; even by 2010, industry analysts expect next generation high-speed data services to comprise less than 3% of industry

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<sup>38</sup> *Id.* at 58.

<sup>39</sup> *See* Appendix C.

revenue.<sup>40</sup> Voice and current generation data services will continue to drive revenue for the U.S. wireless industry for quite some time. Voice and current generation data services do not require wideband emerging digital technologies; on the contrary, with its introduction of Motorola's 6:1 iDEN® technology upgrade, Nextel is not today nor will it be at a cost or spectral disadvantage to its competitors in providing mobile voice services in the foreseeable future.<sup>41</sup> In any case, Verizon Wireless fails to recognize that Nextel holds today licenses for 10 MHz of contiguous 800 MHz spectrum on which it can deploy CDMA or similar wideband technologies to support next generation high-speed data services if it chooses to do so.<sup>42</sup> Verizon Wireless also ignores the new technologies Nextel can deploy to provide new services to customers, including services provided over noncontiguous spectrum.<sup>43</sup>

Verizon Wireless also misses another key valuation point; *i.e.*, the type of operators that will use the spectrum Nextel surrenders and the value for their uses as opposed to theoretical high-speed data services. Nextel's spectrum contributions are going to private wireless and public safety licensees through direct swap transactions, or to the FCC for reassignment to private wireless and public safety users. Most of these operators use a fairly small number of channels in traditional, high-site networks; accordingly, smaller non-contiguous assignments are preferable to larger contiguous blocks for these licensees and are more valuable to them. Moreover, public safety communication networks are designed to provide coverage over a wide area using

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<sup>40</sup> Appendix D includes a breakdown of projected U.S. wireless revenue by voice and data services from 2003 through 2010.

<sup>41</sup> Nextel anticipates completing this upgrade in the first half of 2004.

<sup>42</sup> Verizon's analysis also assumes that Nextel is not making significant use of its 900 MHz licenses. This is again factually inaccurate. Nextel has been selling 900 MHz-capable handsets since April 2002 and has been deploying 900 MHz network infrastructure since the third quarter of that year. Nextel will make full and effective use of its 900 MHz spectrum as part of its dual band, seamless iDEN® nationwide service if it does not surrender that spectrum as part of the Consensus Plan.

<sup>43</sup> For example, Nextel has recently announced plans to further enhance its nationwide digital voice and packet data network by integrating Motorola's WiDEN® higher speed data technology, which is designed to quadruple data speeds.

multiple channels, and the smaller non-contiguous assignments prevent intrasystem interference within these networks.

Thus, Verizon Wireless's attempt to discount the value of Nextel's spectrum by 75% and more does not pass muster. Nor does Verizon Wireless's assertion that the 1.9 GHz spectrum is unencumbered and should receive a value premium. *Verizon Wireless fails to recognize that the 1.9 GHz band is itself encumbered by incumbent BAS operators.* BAS licensees, especially in larger markets, heavily use the G Block. Relocating BAS licensees on a link-by-link basis is not feasible given the integrated nature of BAS operations.<sup>44</sup> Moreover, the Commission has just adopted a BAS relocation plan that would relocate all BAS licensees in the 1990-2025 MHz band at one time, rather than clearing different segments of this band in several stages.<sup>45</sup> These complications will make BAS relocation even more burdensome for Nextel and other future licensees of this spectrum. The broadcast industry has estimated that it will cost over \$500 million to relocate BAS licensees,<sup>46</sup> although the Commission has stated this estimate "may underrepresent certain relocation costs."<sup>47</sup> Obviously, these substantial relocation costs significantly reduce the value of this spectrum.<sup>48</sup>

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<sup>44</sup> *In the Matter of Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for use by Mobile Satellite Service*, Third Report and Order and Third Memorandum Opinion and Order, FCC 03-280, ET Docket No. 95-18, ¶ 20 (released Nov. 10, 2003) ("*BAS Relocation Order*").

<sup>45</sup> Under this single phase relocation process, which will be triggered at different times depending on market size, BAS licensees will be relocated to the final BAS band plan rather than an interim band plan. *See BAS Relocation Order* ¶ 2.

<sup>46</sup> *See* Letter from Larry Walke, NAB, to Marlene Dortch, FCC Secretary, ET Docket No. 95-18, at 2 (Oct. 16, 2003).

<sup>47</sup> *Relocation Order* ¶ 34 n.94.

<sup>48</sup> Moreover, Nextel likely will be the first new operator in this reallocated spectrum making it responsible under the Commission's recently revised BAS clearing rules for clearing BAS incumbents throughout the 1990-2025 MHz spectrum segment. While Nextel would be entitled to BAS clearing reimbursement from subsequent licensees of the cleared spectrum as they initiate service, Nextel will bear – possibly for years – the interim cost of capital for clearing the 6/7ths of the band not licensed to it. This, too, affects the value of the G Block spectrum.



There is another major flaw in arguments by CTIA and others that the value of the 1.9 GHz band is greater than the value of the 700 MHz, 800 MHz, and 900 MHz spectrum for which it would be exchanged under the Consensus Plan. Specifically, the 1.9 GHz spectrum has less favorable propagation characteristics. A commercial operator would have to build a greater number of cell sites at 1.9 GHz to provide the same level of service. Adding more base stations is very expensive. Verizon Wireless itself has estimated that it “can cost between \$800,000 and \$1 million per site to add new base stations.”<sup>49</sup> The inferior propagation characteristics of higher frequency bands such as 1.9 GHz are reflected in a 1998 Australian auction, which offered licenses in both the 800 MHz and 1.8 GHz bands in the same markets. On a price/MHz-pop basis, the winning bids for the 800 MHz licenses were *two and a half times* the value of the 1.8 GHz licenses.<sup>50</sup> The lower value of higher spectrum frequencies is also reflected in the Commission’s decision relocating the Digital Electronic Message Service (“DEMS”) from the 18 GHz band to the 24 GHz band. The Commission recognized that this higher frequency band would have inferior propagation characteristics that would impose greater operational burdens on DEMS licensees. The Commission consequently granted relocating DEMS licensees a *fourfold increase* in their spectrum assignments “to maintain DEMS system performance in the 24 GHz band at a level equivalent to that at which it had operated in the 18 GHz band.”<sup>51</sup>

As these examples demonstrate, any purported benefit resulting from the use of contiguous spectrum is more than offset by the diminished propagation characteristics and BAS encumbrances on the G Block spectrum. Verizon Wireless placed a premium on this spectrum, when a discount for these factors would be more appropriate. Given

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<sup>49</sup> Comments of Celco Partnership, d/b/a Verizon Wireless, WT Docket No. 02-276, at 9 (Oct. 11, 2002).

<sup>50</sup> Lemay-Yates Associates, Inc., “Evolution of Spectrum Valuation for Mobile Services in Other Countries” at 18 (March 2003) (“LYA Report”), *available at*: <[http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/vwapj/microcellsch\\_c.pdf/\\$FILE/microcellsch\\_c.pdf](http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/vwapj/microcellsch_c.pdf/$FILE/microcellsch_c.pdf)>.

<sup>51</sup> *In re Amendment of the Commission’s Rules to Relocate the Digital Electronic Message Service from the 18 GHz Band to the 24 GHz Band and to Allocate the 24 GHz Band for Fixed Service*, Memorandum Opinion and Order, 13 FCC Rcd 15147, ¶¶ 13, 45-54 (1998).

the many variables in spectrum valuation discussed above, the Commission can reasonably conclude that providing replacement spectrum on a “kHz for kHz” basis is warranted and consistent with the public interest. It would ensure that Nextel is provided comparable spectrum for the spectrum it is relinquishing and that its service to customers is not unduly disrupted. This is consistent with past Commission decisions that required incumbent licensees to relocate to different frequencies to achieve the Commission’s public interest objectives.<sup>52</sup>

## **2.2 Comparison Based on Acquisition Costs and PCS A and B Block Auction Prices**

The values of the Consensus Plan spectrum exchange can be estimated by comparing Nextel’s costs in acquiring the spectrum it will contribute under the Plan with the auction prices in the Commission’s A and B Block PCS auction for spectrum that is adjacent to the G Block spectrum. Nextel acquired the 10.5 MHz of spectrum it would surrender under the Consensus Plan in FCC auctions and private market transactions. Nextel’s total acquisition cost for this spectrum amounts to approximately \$2 billion.<sup>53</sup> These acquisitions date back to the late 1980s, with the more recent acquisitions taking place in 2003.

CTIA has relied on the Commission’s PCS A and B Block PCS auctions to estimate the value of the G Block. Noting that this spectrum “is adjacent to the top of the

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<sup>52</sup> See, e.g., 47 C.F.R. § 90.699(d)(2) (requiring EA licensees clearing the upper 200 Channels in the 800 MHz band to relocate incumbents “to facilities that provide equivalent channel capacity,” defined “as the same number of channels with the same bandwidth that is currently available to the end user”). The Wireless Cable Association (“WCA”), whose members include BellSouth and Sprint, has strongly urged the Commission to use a “kHz for kHz” approach in relocating licensees of MDS Channels 1 and 2 that have been displaced by the Commission’s decision to reallocate part of this MDS spectrum to advanced wireless services. WCA stated that “secondary markets cannot function efficiently unless spectrum rights are clear and well-defined. That condition, obviously, cannot be satisfied if potential buyers and lessees of spectrum are exposed to an ongoing threat that the Commission may at any time reclaim the spectrum they are buying or leasing without giving them an identical amount of replacement spectrum in return.” WCA Comments, ET Docket No. 00-258, at 41-42 (filed April 14, 2003).

<sup>53</sup> See Comments of Nextel and Nextel Partners Inc., WT Docket No. 02-55, at 15 (Feb. 10, 2003); Reply Comments of Nextel, WT Docket No. 02-55, at 9-11, App. I (Aug. 7, 2002) (describing Nextel spectrum holdings).

existing PCS band,” CTIA stated in comments filed in this proceeding that “[o]ther carriers paid on average close to \$1.3 billion for 10 MHz (2x5 MHz) of comparable spectrum in the 1994 A and B Block [PCS] auction.”<sup>54</sup> Using these auction prices provides a reasonable means of estimating the value of the G Block because, as CTIA points out, the spectrum awarded in the 1994 PCS auction is directly adjacent to it and thus has the same propagation characteristics.

This apples-to-apples comparison – the market acquisition and auction process of an adjacent 10 MHz of 1.9 GHz spectrum and the market acquisition and auction price for Nextel’s 700, 800 and 900 MHz spectrum – indicates that the value of the spectrum Nextel would surrender – \$2 billion – is worth *more* than the value of the 1.9 GHz spectrum it would receive to replace it. Nextel would actually suffer a net loss of \$700 million in spectrum valuation, on top of the more than \$1 billion Nextel would provide to effectuate incumbent retuning.

This valuation uses the 1994 PCS auctions to estimate the value of the 1.9 GHz spectrum; auction prices, of course, fluctuate over time. Several studies have shown, however, that auction prices have declined over time as the result of the increasing supply of spectrum being auctioned, new technologies that make more efficient use of the spectrum, an increasingly competitive market for wireless services, and other factors. In a 1998 study, Jerry Hausman, a professor of economics at MIT, performed an econometric study of all spectrum auctions that had occurred up to that point. Based on this study, which “should be generally predictive of future auction values,” Professor

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<sup>54</sup> Further Comments of CTIA, WT Docket No. 02-55, at 6-7 (Sept. 23, 2002). It appears that CTIA arrived at this estimate based on straightforward arithmetic. The total proceeds from the A and B Block auctions in 1994 were \$7,736,020,384. The amount of spectrum in those blocks (each of which is 2 X 15 MHz) is six times the spectrum that would be assigned to Nextel under the Consensus Plan. The total A and B Block proceeds divided by 6 equals just under \$1.3 billion.

Hausman concluded that “[p]rices for spectrum auctioned by the FCC have been decreasing over time on a per MHz per population basis.”<sup>55</sup>

A recent study in March 2003 confirms this trend. Lemay-Yates Associates analyzed the results of the A, B, C, D, E and F Block PCS auctions, correcting for defaults and re-auctions. The data clearly shows auction prices declining over time. Spectrum prices were “\$0.32 per MHz per pop licensed on average in the D, E, F and C re-auctions between 1997 and 2001, down significantly (from a 37% to a 69% decrease) from the prices paid in the A, B bands [\$0.51 per MHz per pop per license] and original C band [\$1.05 per MHz per pop per license] auctions.”<sup>56</sup>

This trend makes it highly unlikely the 1.9 GHz G Block is worth anywhere near the inflated estimates championed by CTIA, Cingular and Verizon Wireless. As discussed in section 2.3 below, CTIA has overestimated the value of the G Block by attempting to extrapolate the value of a nationwide block of spectrum from private market spectrum acquisitions involving principally large markets. Although it uses a different valuation methodology, Verizon Wireless has also substantially overestimated the value of the 1.9 GHz replacement spectrum Nextel would receive under the Consensus Plan.

Verizon Wireless derived its estimate by calculating an aggregate net business enterprise value (“BEV”) of U.S. wireless companies, then subtracting the net tangible assets and customer relationship values of these firms, thus yielding an estimate of the

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<sup>55</sup> Statement of Professor Jerry Hausman at 3-4, submitted with Comments of the National Association of Broadcasters and the Association for Maximum Service Television, Inc., MM Docket No. 97-247 (May 4, 1998).

<sup>56</sup> LYA Report at 11-12. We recognize that some of the auctions considered in this report did not involve nationwide spectrum and thus have limited utility as an indicator of a nationwide spectrum block valuation. We also recognize that this downward trend in spectrum auction prices is not always linear, as auction prices may increase when an auction is conducted at a particular point where short-term market forces so dictate. Nevertheless, over the long-term, the evidence indicates that the prices carriers are willing to pay in government spectrum auctions are trending lower.

aggregate value of the spectrum rights held by these firms.<sup>57</sup> It used a combination of a market approach (receiving a 25% weighted average) and an income approach (receiving a 75% weighted average) based on a discounted cash flow model to estimate the BEV of the three major non-public wireless companies, Verizon Wireless, Cingular and T-Mobile. It used an approach based on total Market Value of Invested Capital (“MVIC”) to estimate the BEV for the publicly traded wireless companies. Based on these calculations, Verizon Wireless estimated that the value of the spectrum used by U.S. wireless carriers is \$82.2 billion, or \$1.82 per MHz-pop.<sup>58</sup>

Verizon Wireless’s estimate of the value of spectrum used by U.S. wireless carriers – as well as the value of the 1.9 GHz G Block spectrum – is seriously flawed in a number of respects. First, Verizon Wireless ignored the income taxes paid by the non-public wireless companies in estimating the annual discounted cash flows – and BEVs – of these companies.<sup>59</sup> Discounted cash flows are obviously affected by income taxes, and by ignoring this fact Verizon Wireless has significantly overestimated the BEV for these non-public wireless companies.<sup>60</sup> This in turn resulted in an inflated estimate of the spectrum held by these companies. Correcting for this error by adjusting for income tax

<sup>57</sup> See Verizon Wireless Study at ii-iii.

<sup>58</sup> *Id.* at 37-38. Interestingly, Verizon Wireless’s valuation methodology indicates that the value of Nextel’s spectrum holdings is \$2.13 per MHz-pop, or 17% higher than its estimated industry average. See *id.*, Appendix E at 1-2.

<sup>59</sup> In these income approach BEV calculations, Verizon Wireless used average free cash flow estimates from wireless industry investment banking analysts, but these estimates did not include the income taxes paid for the wireless company operations by their parent companies.

<sup>60</sup> Correctly adjusting for the income tax effects would reduce the BEVs for these three non-public companies as follows (figures are in \$ billions) (see Appendix E for detailed calculations of these adjustments):

<u>Wireless Company</u>	<u>BEV</u>	<u>Adjustment</u>	<u>Adjusted BEV</u>
Verizon Wireless	\$56.9	-\$8.9	\$48.0
Cingular	\$23.0	-\$4.1	\$18.9
T-Mobile	\$10.3	-\$3.1	\$7.2

Oddly enough, Verizon Wireless attempted to factor in income tax effects in estimating the terminal value of these companies, but failed to do so in estimating the annual free cash flows and thus undermined the validity of its BEV estimates.

effects reduces Verizon Wireless's estimated value of U.S. average spectrum license value on a per MHz-pop basis by \$0.36, or 20% of its estimated value of \$1.82.

Second, Verizon Wireless incorrectly added an equity control premium of 30% in calculating the MVICs of the publicly traded wireless companies.<sup>61</sup> This resulted in an overestimate of the BEVs for these companies, and inflated Verizon Wireless's estimate of the value of U.S. wireless industry spectrum holdings by \$15.2 billion. Although control premiums may be relevant in analyzing the acquisition of an individual company, it is inappropriate, and contrary to investment banking industry practice, to include such premiums in calculating the business enterprise value of an entire industry. The control premium is akin to the goodwill value of a wireless company,<sup>62</sup> and clearly is unrelated to the value of the spectrum rights held by an individual company or the wireless industry. Eliminating the equity control premium from the net aggregate BEVs of the publicly traded companies reduces Verizon Wireless's estimated U.S. average spectrum license value on a per MHz/POP basis by \$0.34, or 19% of its estimated value of \$1.82 per MHz-pop.

Third, in estimating the value of customer relationships, Verizon Wireless inappropriately used a cost approach rather than an income-based approach.<sup>63</sup> The Verizon Wireless valuation study itself acknowledges that the latter approach is preferable, stating that "[a]pproaches that are based on cost would be the least meaningful and most subjective."<sup>64</sup> A more appropriate methodology for calculating the customer

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<sup>61</sup> Verizon Wireless Study at 25.

<sup>62</sup> In an acquisition, goodwill is generally calculated as the purchase price for a company over the fair market value of the assets acquired. For example, in August 2002 ALLTEL acquired CenturyTel for \$1.59 billion in cash, with the goodwill value of this acquisition recorded as \$1.1 billion. *See* ALLTEL Corp., SEC Form 10-K, Table F-50, page 140 (Dec. 31, 2002).

<sup>63</sup> Verizon Wireless Study at ii, 32. Under this cost approach to estimating the value of customer relationships, Verizon Wireless multiplied each company's total subscribers as of December 31, 2002 by their respective cost per gross add.

<sup>64</sup> Verizon Wireless Study at 15. *See also id.* at 15-16 (the "best approaches to value are those that rely on estimates of future income to be realized from developing the license, and on market data from the market valuations of other wireless companies").

relationship assets would thus be an income-based approach that estimates the net present value of the projected future cash flows from existing customers only, reduced by churn, to perpetuity. Based on this approach, Nextel estimates that the net value of customer relationship assets for the U.S. wireless industry is \$70.7 billion.<sup>65</sup> This is significantly more than the \$47.6 billion estimate derived from Verizon Wireless's cost approach, and reduces Verizon Wireless's estimated US average spectrum license value on a per MHz-pop basis by \$0.51, or 28% of its estimated value of \$1.82 per MHz/POP.

These are just some of the flaws in Verizon Wireless's estimate of the value of the replacement spectrum Nextel would receive under the Consensus Plan. They reflect fundamental errors in Verizon Wireless's analysis, and suggest that Verizon Wireless is more interested in buttressing its "windfall" arguments than in providing reliable estimates of the spectrum swaps proposed by the Consensus Plan. As shown above, spectrum values today are lower than at the height of the C Block auction and reauction, as Verizon Wireless itself has recognized.<sup>66</sup> Yet even using the 1994 C Block auction prices to estimate the value of the G Block, the value of the spectrum Nextel would surrender would still *exceed* the value of the replacement spectrum it would receive under the Consensus Plan.

### **2.3 Comparison Based on Recent Private Transactions**

Private market transactions in which wireless carriers acquire spectrum licenses from other carriers can also help establish spectrum values. The "price/MHz-pop" for a particular transaction can be calculated by dividing the total acquisition price by the total population covered by the licenses and the total amount of spectrum (measured in megahertz) covered by the licenses. A transaction's "price/MHz-pop" can then be used to extrapolate the estimated value of a different amount of spectrum or a set of spectrum licenses covering a larger or smaller population.

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<sup>65</sup> See Appendix F. This is a conservative estimate because most of the wireless industry's customer churn results from loss of customers to other wireless carriers. It is estimated that less than 10% of overall wireless industry customer churn results from the loss of customers who cancel their wireless service and do not sign up with another wireless carrier.

<sup>66</sup> See *supra*, notes 33-34.

This approach must be used with care, however. If the analysis fails to control for other significant variables that influence spectrum value, it will yield inaccurate results. To prevent this, the analysis set forth below applies a consistent set of assumptions in offering an alternative apples-to-apples comparison of the relative value of the spectrum swaps proposed in the Consensus Plan.

First, the analysis seeks, to the extent possible, to use recent private transactions to estimate the spectrum swaps. As discussed above, however, because spectrum values change over time, the analysis should control for this variable if possible. It would be unreasonable, for example, to estimate the value of the 1.9 GHz spectrum by using recent transactions, but to estimate the value of the spectrum Nextel would surrender by using its original costs in acquiring this spectrum many years ago. This would result in a misleading, “apples to old apples” comparison.

Second, the analysis takes into account the price variation that carriers are willing to pay as a function of market size. The price/MHz-pop of a transaction involving large markets will tend to be significantly higher than the price/MHz-pop of a transaction involving small or mid-size markets or a blend of different size markets. Carriers tend to place a higher per MHz-pop value on larger, more densely-populated markets than small or mid-size markets because there are greater efficiencies in operating in larger markets; *e.g.*, with more prospective customers over which to spread fixed costs and generate revenue, marketing and infrastructure costs can be spread out over a greater number of customers. These efficiencies in turn make larger markets more profitable on a per-pop basis, which in turn tends to result in higher per MHz-pop prices.

Accordingly, it is incorrect to estimate the value of a nationwide block of spectrum by relying solely on the price/MHz-pop of a transaction that did not include a representative distribution of different market sizes or geographic diversity. A transaction that included large markets but few small markets, for example, would yield a price/MHz-pop that overestimates the value of a nationwide block of spectrum. CTIA has used this “apples to oranges” approach in estimating the value of the G Block. This



error is akin to estimating the value of all real estate in the U.S. based only on a sample of real estate transactions in Manhattan – it yields inaccurate and misleading conclusions.

The analysis presented below uses a “tiered pricing model” to account for market size variations in value and to correct CTIA’s flawed estimate of the value of the nationwide G Block spectrum – thereby generating a reasonable estimation of a nationwide block of spectrum based on private market transactions. Appendix G describes this model in detail. The tiered pricing model confirms, based on marketplace data from transactions in 2003, that larger markets have higher per MHz-pop values than smaller markets. It also demonstrates how Consensus Plan opponents have grossly exaggerated the value of the 1.9 GHz G Block.

### **2.3.1 Estimating the Value of Nextel’s Contributions to the Consensus Plan**

*Valuation of Nextel’s 800 MHz and 900 MHz Spectrum.* Two relatively recent transactions can be used to estimate the value of the 2.5 MHz of 800 MHz spectrum and the 4 MHz of 900 MHz spectrum that Nextel would contribute to the Consensus Plan. The first is Nextel’s acquisition of 800 MHz spectrum from Chadmoore Communications in February 2002. The second is Nextel’s acquisition of 900 MHz spectrum from Neoworld Communications in January 2003.<sup>67</sup> The following tables set forth the relevant data from these acquisitions and the extrapolated value of Nextel’s nationwide 800 MHz and 900 MHz spectrum contributions to the Consensus Plan.

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<sup>67</sup> Neoworld was a license-only transaction and thus no adjustment need be made to the spectrum valuation to account for non-spectral assets. Chadmoore included a very small number of customers and network equipment.

#### 800 MHz Valuation

Transaction	Chadmoore Communications
Date	Closed Feb. 2002
Total Consideration	\$130 million
\$/MHz/Pop	\$2.02
Estimated Value of 2.5 MHz in 800 MHz band	\$1.44 billion (\$2.02 x 2.5 MHz x 285 million <sup>68</sup> )

The Chadmoore transaction involved nearly 100 million pops in geographically diverse markets. The pops are concentrated in second and third tier markets with no top-10 markets. This transaction is not skewed by large market acquisitions and the high price/MHz-pop that goes with such acquisitions that would result in an overestimation of the value of a nationwide block of spectrum. If anything, this transaction underestimates the value of the Nextel's 800 MHz contribution by not including any of the largest markets.

#### 900 MHz Valuation

Transaction	Neoworld Communications
Date	Closed Jan. 2003
Total Consideration	\$276 million
\$/MHz/Pop	\$1.44
Estimated Value of 4 MHz in 900 MHz band	\$1.64 billion (\$1.44 x 4.0 MHz x 285 million)

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<sup>68</sup> CTIA used a U.S. population total of 285,230,516 in its proposed valuation of the 1.9 GHz spectrum; for consistency, we have used the same total in valuing Nextel's spectrum contributions. *See* Letter from Diane Cornell, CTIA, WT Docket No. 02-55 (July 9, 2003) ("CTIA July 9 Ex Parte Letter"). We note, however, that according to the U.S. Census Bureau, the total U.S. population as of April 1, 2000 was 281,421,906.

The Neoworld transaction involved nearly 200 million pops in geographically diverse markets of varying sizes. The price/MHz-pop for this transaction is consequently an accurate measure of the value of a nationwide spectrum position.

*Valuation of Nextel's 700 MHz Spectrum.* The best available data regarding the value of this spectrum are Nextel's costs in acquiring it in the FCC's 700 MHz Guard Band auctions,<sup>69</sup> and Nextel's acquisition of additional 700 MHz Guard Band spectrum in a subsequent private market transaction. There is no need to calculate a price/MHz-pop because Nextel would surrender its entire 700 MHz spectrum position under the Consensus Plan.

Nextel Bids in Auction 33	\$337,862,000
Nextel Bids in Auction 38	\$ 7,849,000
Private Market Acquisition	\$ 5,000,000
<b>Total Value of 700 MHz Spectrum</b>	<b>\$350,711,000</b>

*Nextel's Financial Contributions Under the Consensus Plan.* Nextel will make the following financial contributions under the Consensus Plan:

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<sup>69</sup> Auction 33 was completed September 21, 2000, while Auction 38 was completed February 21, 2001.

Public Safety and Private Wireless Relocation Costs	\$ 850,000,000
Nextel Relocation Costs: Base Station Filtering Only (to comply with Appendix F)	\$150,000,000 <sup>70</sup>
Est. Share of Costs of Clearing 1.9 BAS Licensees	\$150,000,000 <sup>71</sup>
UTAM Reimbursement	\$ 15,000,000 <sup>72</sup>
<b>Total Financial Contribution</b>	<b>\$1,165,000,000</b>

<sup>70</sup> Nextel will spend \$150 million for equipping base stations with the filtering necessary to provide the interference protections specified in Appendix F of the Consensus Plan. Nextel will also have to incur additional costs to add base stations to make up for the network capacity losses it may incur during the retuning/realignment process before its 866 – 869 MHz replacement channels are cleared and available for iDEN® use.

<sup>71</sup> The broadcast industry has estimated that it will cost \$512 million to clear BAS incumbents from the 1990-2000 MHz and 2020-2025 MHz bands, which have been reallocated to terrestrial wireless services, and from the 2000-2020 MHz band, which has been reallocated to Mobile Satellite Service (“MSS”) licensees. Letter from Larry Walke, NAB, to Marlene Dortch, FCC Secretary, ET Docket No. 95-18, at 2 (Oct. 16, 2003). In the best case scenario, Nextel presumably would ultimately be responsible for only one-seventh of these costs, since its *pro rata* share of the 35 MHz of BAS spectrum to be retuned is only 5 MHz. This would yield a cost in excess of \$70 million.

There are, however, significant uncertainties regarding the BAS relocation process that could increase Nextel’s costs. First, BAS relocation costs may be higher than the broadcast industry estimate. *See supra* at 18 and note 47. Second, the Commission has recently amended its BAS relocation rules to require that all BAS licensees in a market be relocated to the new BAS band in one stage, rather than in a two-stage process as provided under its previous rules. Under these rules, the first new entrant must, before initiating service in any part of the 1990-2025 MHz band, clear all mobile BAS licensees from the entire 1990-2025 MHz band before beginning service in the top 30 television markets, and clear all fixed BAS licensees in all markets. (Mobile BAS licensees in markets 30-100 must be cleared within three years after the new entrant begins service, and mobile licensees in all other markets must be cleared with five years after the new entrant begins service.) This would impose very high up front costs on the first entrant to the band, which could very well be Nextel. The Commission’s recent BAS relocation order does not fully address how the first entrant would be reimbursed by subsequently entering licensees. Moreover, the BAS relocation order focuses on relocation of BAS by MSS licensees, and does not specify rules to govern the relocation and reimbursement process for Nextel and other terrestrial wireless licensees that would be assigned spectrum in the band. Because of all of these significant uncertainties, Nextel is using a BAS relocation cost estimate of \$150 million for its *pro rata* share of total BAS relocation costs.

<sup>72</sup> UTAM has reportedly spent approximately \$60 million clearing the fixed microwave licensees from the 1910-1930 MHz band. Comments of UTAM, Inc., WT Docket No. 02-55, at 4 (May 6, 2002). Nextel’s *pro rata* share of these costs would amount to approximately \$15 million (5 MHz/20 MHz x \$60 million).

*Summary.* Based on the above-discussed data from private market transactions, Nextel's total estimated contribution to the Consensus Plan is:

800 MHz Spectrum	\$1.44 billion
900 MHz Spectrum	\$1.64 billion
700 MHz Spectrum	\$0.35 billion
Financial Contribution	\$1.16 billion
<b>Total Nextel Contribution</b>	<b>\$4.59 billion</b>

### 2.3.2 Estimating the Value of 1.9 GHz Spectrum

CTIA has proposed that the Commission use two recent private market transactions involving PCS licenses to estimate the value of the 1.9 GHz G Block that would be assigned to Nextel as replacement spectrum under the Consensus Plan. In the first transaction, Verizon Wireless acquired PCS licenses and other assets from Northcoast Communications for \$750 million. In the second transaction, Cingular seeks to acquire PCS licenses from NextWave for \$1.4 billion.<sup>73</sup> Based on these transactions, CTIA estimates the value of the 1.9 GHz spectrum at between \$4.5 billion and \$5.3 billion.<sup>74</sup>

CTIA's estimate significantly overstates the value of the G Block. First, in the Cingular-NextWave transaction, CTIA assumes that Cingular would acquire only 10 MHz from NextWave in 34 markets. In fact, Cingular is seeking to acquire 20 MHz of spectrum in two of these markets (Tampa, Florida, and El Paso, Texas), and 10 MHz in the other 32 markets. CTIA ignored this in its analysis, resulting in a somewhat higher, and inaccurate, price/MHz-pop for this transaction.

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<sup>73</sup> Relying on press reports at the time, CTIA stated that the purchase price in the Cingular/NextWave transaction was \$1.5 billion. See CTIA July 9 Ex Parte Letter. The parties' FCC assignment application, however, states that the purchase price is \$1.4 billion. See Cingular/NextWave FCC Form 603, Attachment 1, ULS File No. 0001461949. This application is currently pending before the Commission.

<sup>74</sup> CTIA July 9 Ex Parte Letter.

Second, both transactions involve spectrum acquisitions that involved primarily very large markets. In the Northcoast deal, Verizon Wireless acquired licenses in, e.g., New York, Boston, and Minneapolis. In the NextWave deal, Cingular proposes to acquire spectrum in Los Angeles, Chicago, San Francisco, Washington, DC, Boston, Houston, Atlanta, and Dallas, along with other markets. As described above, wireless carriers will pay a premium for large market spectrum. In fact, both Verizon Wireless and Cingular trumpeted these acquisitions in press releases as large market spectrum additions to their networks. In describing the Northcoast licenses, Verizon Wireless stated that these “highly attractive licenses, overlapping some of our most densely populated service areas, will enable us to efficiently deploy capital to provide more network capacity.”<sup>75</sup> Cingular stated that the NextWave deal will enhance its spectrum position “in many of our larger existing markets” and permit growth and expanded coverage “in some of our key markets.”<sup>76</sup>

Thus, the price/MHz-pop that CTIA used to value a nationwide 1.9 GHz license is inflated by the valuation premium carriers place on large, key markets as compared to the price/MHz-pop in smaller markets. This inflation is sharply demonstrated by comparing the dramatic difference in price/MHz-pop in the Northcoast transaction with two recent Verizon Wireless transactions involving smaller markets. For example, on September 8, 2003, Verizon Wireless acquired spectrum in Pittsburgh, Pennsylvania, for \$0.42/MHz/pop and in Lebanon, New Hampshire, for \$0.25/MHz/pop<sup>77</sup> – *over two-thirds less* than the price/MHz-pop it paid in the larger-market Northcoast acquisition. The sharp difference in price/MHz-pop between large and smaller markets can also be seen in Cingular’s acquisition of PCS licenses in Tallahassee, Panama City, and Ocala, Florida

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<sup>75</sup> Verizon Wireless Press Release, Dec. 19, 2002 (*available at*: <<http://news.verizonwireless.com/proactive/newsroom/release.vtml?id=78375>>). In the same press release a Northcoast representative described the licenses being acquired by Verizon Wireless as “[l]ocated in a number of very attractive markets.” *Id.*

<sup>76</sup> Cingular Press Release, Aug. 5, 2003 (*available at*: <[http://www.cingular.com/about/latest\\_news/03\\_08\\_05](http://www.cingular.com/about/latest_news/03_08_05)>).

<sup>77</sup> Verizon Wireless Press Release, Sep. 8, 2003 (*available at*: <<http://news.vzw.com/news/2003/09/pr2003-09-08.html>>).

from Sunshine PCS Corporation.<sup>78</sup> The price/MHz-pop of this transaction was \$1.06 – much lower than the \$1.86 price/MHz-pop valuation in the Cingular/NextWave transaction, which, as described above, involved a significant number of large markets. CTIA conveniently ignored these dramatic differences in the market value of large and small market spectrum licenses by relying only on large-market skewed acquisitions to value a nationwide geographic license.

Consequently, a reliable estimate of the value of a nationwide G Block license would use a representative selection of large, medium, and small market transactions to better account for market size value variations in constructing a nationwide spectrum value estimate. The Tiered Pricing Model described in Appendix G incorporates this methodology. Applying it here using recent Verizon Wireless marketplace transactions yields a value of \$3.5 billion for a 10 MHz nationwide license at 1.9 GHz.<sup>79</sup>

### **3. Exchange Summary**

As set forth in the previous sections, a reliable estimate of spectrum values based on private market transactions requires a consistent set of assumptions and consideration of the influence of market size. Summarizing these estimates, the following table demonstrates that the estimated value of Nextel's spectral and financial contributions under the Consensus Plan exceeds the estimated value of the 1.9 GHz G Block Nextel would receive as replacement spectrum under the Plan.

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<sup>78</sup> Cingular Press Release, Aug. 18, 2003 (*available at*: <[http://www.cingular.com/about/latest\\_news/03\\_08\\_018](http://www.cingular.com/about/latest_news/03_08_018)>).

<sup>79</sup> Appendix G does not attempt to perform the same analysis for the Cingular acquisitions described above because they do not provide price points for a sufficient number of different size markets, making it impossible to construct a representative sample of markets from which to extrapolate a reasonable estimate of a nationwide spectrum block. The lower price/MHz-pop of Cingular's Sunshine PCS transaction, as opposed to its larger market NextWave transaction, is nonetheless consistent with a lower G Block value than CTIA calculated.

Estimated Value of Nextel Spectral and Financial Contribution	Estimated Value of 1910-1915/1990-1995 based on Verizon's 2003 transactions
<b>\$4.6 billion</b>	<b>\$3.5 billion</b>

#### 4. Conclusion

A core statutory responsibility of the Commission is to ensure effective public safety communications. The Consensus Plan will enable the Commission to satisfy this vital responsibility. The Consensus Plan enjoys the overwhelming support of the public safety community, and will provide ongoing and substantial public benefits. By remedying interference to public radio systems in the 800 MHz band and providing much needed additional spectrum for public safety systems, the Consensus Plan will save lives and help first responders protect Americans against terrorism, crime, natural disasters and other emergencies. The Consensus Plan will cover all incumbent relocation costs, and therefore avoids the need for taxpayer funding. The exceptional public benefits of the Consensus Plan far outweigh the one-time costs of implementing the Plan.

Critics of the Consensus Plan – primarily composed of Nextel's competitors – ignore these substantial public benefits in arguing about the relative values of the spectrum swaps proposed by the Consensus Plan. These arguments miss the *public interest* issues in this proceeding and instead focus on the corporate self-interest of these parties. In any event, as this report has demonstrated, the spectrum exchanges recommended by the Consensus Plan simply provide comparable replacement spectrum to the incumbent licensees that would be required to relocate under the Plan, and would not give any licensee a "windfall" benefit.



# **Appendix A**

**"When you're faced with a critical incident, whether it's a terrorist act or a natural disaster, you've simply got to have reliable, interoperable, communications. This is part of the tragic lesson taught to us by September 11."**

**-Mayor Rudy Giuliani**

# **America Talks Interoperability**

**Why We Can't Wait**

**A Public Opinion Study By  
The Luntz Research Companies**



# A Message From Dr. Frank I. Luntz

Americans have always been a uniquely optimistic, forward-looking people. For 225 years, we have been driven by a desire to do more, to do better, to be the best. Unlike Europeans, Americans have consciously and deliberately rejected the status quo. For us today, as it was even during times of war and depression, happy days are just around the corner.

Much of our historic optimism has been tied to the relationship between expanding personal choices and improving technology. We have been early adopters of technology and lead the world in infrastructure and cutting-edge discoveries. In the face of every threat that we have faced – foreign or domestic, economic or social – we have always had faith that technology would help us find the solution.

But today, tragically, some of that confidence has subsided. In the past, our threats were clearly defined. Today, Americans are dealing with a more nebulous threat and have an accordingly nebulous fear of its impact on their daily lives. In the past, we had confidence that somehow our democracy would lead us in the right direction. Today we have only limited faith in our government to do anything for anyone. In the past, Americans knew a solution was just around the corner. Today, we just don't know.

As in the past, Americans want and expect the finest protection money can buy, and we believe the government's chief responsibility is to provide it. There is simply no acceptable alternative. So it naturally follows that we expect first responders on the frontlines of personal and national security to have every means necessary to get the job done.

In the aftermath of the World northeast blackout and becomes exceedingly clear communication. Right now, and failures to communicate circumstances are the greatest consequences was this more evident

**"[Americans] expect first responders...to have every means necessary to get the job done."**

Trade Center attacks, the Hurricane Isabel, it that it all starts with there just isn't enough, in the most dire of failures that have the in human terms. Nowhere than on 9/11.

Into this not so brave new world comes a new language. "Interoperability" is a term not particularly well known or understood by anyone, but one that holds the key to our security and the restoration of our confidence. Let me explain.

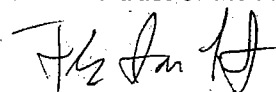
As you will read on the pages that follow, the perceived lack of even an adequate system of communication among first responders is proof positive our leaders are failing to lead. And this perception has been validated by the reality. As the Rudman report to the Homeland Security Department entitled *"Emergency Responders: Drastically Underfunded, Dangerously Unprepared"* emphatically states, the American people are vulnerable to catastrophe because their government won't cough up enough dough to protect them.

This flies in the face of American expectations. When it comes to national security, Americans have believed for decades that no price is too high. Why should domestic security be any different? If our troops deserve the best in technology to fight enemies abroad, then don't our firemen, police officers, paramedics, and National Guard deserve the same? In fact, isn't it more important to have the right infrastructure in place to respond to natural disasters as well as man-made crises?

Those who stand in the way of 100% interoperability are in dangerous and flagrant violation of two essential American traditions and principles: we must be the very best at what we do, and our government must do everything in its power to protect us from harm.

We know deep down that it is not a question of "if" but "when" the next attack will occur. We know that someone somewhere within our borders is suffering through a natural disaster almost every day of the year. Until now, the powers that be have had a pass for flaws in its response to the first attacks. No longer.

From now on, we will hold **you**, our elected officials, accountable. This is not an issue that can wait until after the next catastrophe. If the communication fails – if interoperability remains a concept rather than a reality – those who failed to act to implement the solution will pay for violating the sacred trust of the American people.



Dr. Frank I. Luntz

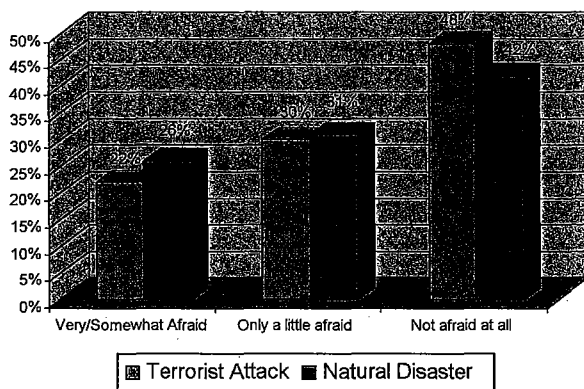
## EMERGENCY RESPONSE: TAKING THE PUBLIC TEMPERATURE

You know the old saying about striking while the iron is hot? As far as public sentiment goes, *concern over emergency response right now is burning.*

For the first time in American history, a significant portion of the populace has a personalized fear for their personal safety and the safety of their immediate family at the hands of a terrorist attack. The fear is close to home and, as you will see below, it is not going to recede with time.

*"How afraid are you that you or an immediate family member will be the victim of a terrorist attack at some point in your life?"*

*"And how afraid are you that you or an immediate family member will be the victim of a natural disaster like a tornado, hurricane, or earthquake?"*



And although people are less concerned about terrorism than about natural disasters, there is still a great deal of concern about terrorism. In fact, on the national level, fully 40% of Americans are more concerned about a potential terrorist incident than about a natural disaster (chosen by 48%).

There are so many political issues with which emergency response must compete, yet there is no getting around the fact that this *personalized* fear of disaster still remains a front-burner issue for most Americans.

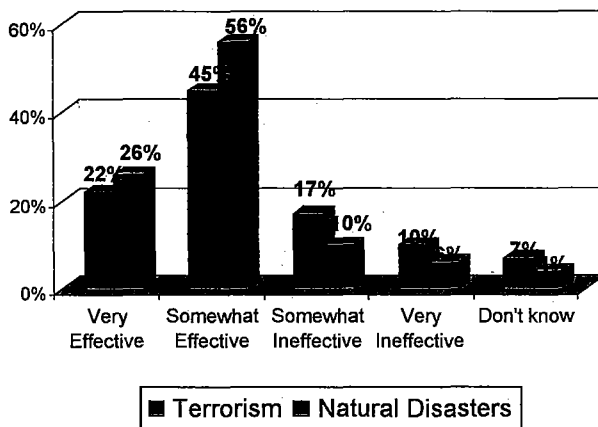
And Americans clearly expect the government to be responsible for protecting their safety. Yet, despite two years of talk about improving the emergency response system, Americans still lack confidence in the government's ability – on either a national or local level – to effectively respond to an emergency.

### THE THREE MOST INTERESTING DEMOGRAPHIC FINDINGS ABOUT ATTITUDES TOWARDS EMERGENCY RESPONSE

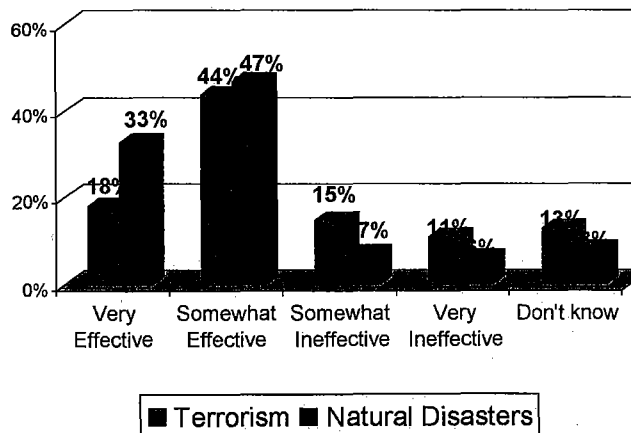
- 1| Republicans are more than twice as confident in the federal emergency response system (31%) than Democrats (18%) or independents.
- 2| The younger you are, the more fearful you are of a terrorist attack. Fully 51% of 18-29 year-olds are more scared of terrorism than natural disaster. By comparison, only one-third (33%) of senior citizens are more afraid of a terrorist attack than a natural disaster.
- 3| Two years have passed since 9/11, yet residents of the Northeast are still the most afraid of a terrorist attack of any region of the country.

**"...Americans clearly expect the government to be responsible for protecting their safety."**

***Based on what you have heard, how effective do you think the federal emergency response system is in responding to a terrorist attack/natural disasters?***



***Now think about your local community...again based on what you have heard, how effective do you think the LOCAL emergency first responders are in responding to a terrorist attack/natural disasters?***



While most Americans believe that their local and national emergency responders are at least somewhat effective at responding to major emergencies, the strength of their convictions is thin. Just one-third of Americans believe that their local emergency first responders are very effective at responding to a natural disaster and fewer than one in four Americans believe that either national or local emergency first responders are very effective at responding to a terrorist attack.

How could this be, you might ask? Hasn't President Bush declared the War on Terror as the foremost concern of his administration? As he stated on November 25, 2002, upon creation of the Homeland Security Department, "From the morning of September the 11, 2001, to this hour, America has been engaged in an unprecedented effort to defend our freedom and our security. We're fighting a war against terror with all our resources, and we're determined to win." This is the hallmark of this President's administration, and he emphasizes the critical importance of homeland security at every turn.

And furthermore, doesn't every poll show that the American people strongly support his efforts to that end? Obviously the answer to both questions is yes. The fact is, presidential emphasis and public support should translate to a continuing public mandate to fix the current holes in our homeland security infrastructure.

This presents an interesting challenge for government leaders. The concern is there. The expectation that government should solve the problem is there. The recognition that reality does not meet the expectation is there. And the solution exists.

So, how do you go about addressing a problem that has an obvious solution that can be summarized in a single word that few can pronounce and even less can define?

## VOICES OF AMERICA: TOP TEN INCORRECT DEFINITIONS OF "INTEROPERABILITY"

- 10 "Something that works backwards."
- 9 "They were going to use a scope or something and operate inside."
- 8 "To be able to break into something, like conversation."
- 7 "To operate something from one thing to another."
- 6 "Someone that doesn't know what they are doing."
- 5 "Something to do with the brain."
- 4 "Something to do with national security."
- 3 "Extremely impaired."
- 2 "A building someone is working out of."
- 1 "Ability to enter a room."

## WHAT AMERICANS REALLY WANT

All this talk of how America has changed in the face of adversity may sound overly gloomy. After all, aren't we still the most resilient nation in the world? Haven't our citizens, military, and government acted with bravery and determination in the wake of those attacks?

Without a doubt, yes. And Americans realize that too. The intent of this document is not to say that the America of today is a shell of its former self, devoid of the conviction necessary to confront the evils and scourges of the world. In fact it is quite the opposite. It is to demonstrate that the American people

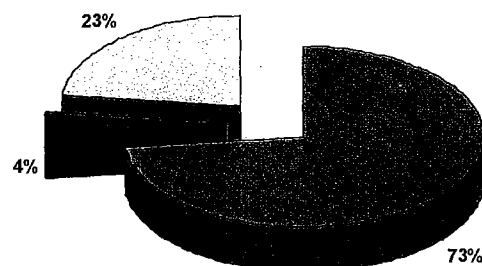
overwhelmingly agree about the role of government in protecting its citizens.

Emergency response may be only one priority in a sea of issues that impact their daily lives. That is why the American people of today are much more dependent on *you*, their elected and appointed officials, to make the case for why *action needs to be taken now*.

***Because when it comes to interoperability, here's what Americans really want:***

- 1 **Government must protect people from harm.** Fully 73% of the country agrees with the following statement, including 39% who strongly agree:

**"The primary role of government is to protect the people from harm. If our leaders cannot guarantee that emergency response teams have the technology to meet disaster situations, they have not been doing their jobs."**



☒ Strongly/Somewhat Agree
 ☐ Neither/DK/Refused
 ☐ Strongly/Somewhat Disagree

Of all the statements we tested, none had more universal agreement. With less than a quarter (23%) disagreeing with the statement to any degree, the prioritization of technology in addressing the threat of disaster has been embraced by the American people.

Government has a responsibility to protect us. Period. As far as the American people are concerned, schools, roads, tax cuts, even prescription drug benefits, are all services that government can provide. Keeping us safe, on the other hand, is what government must provide. There is nothing optional about it, and this realization resonates like no other with the public.

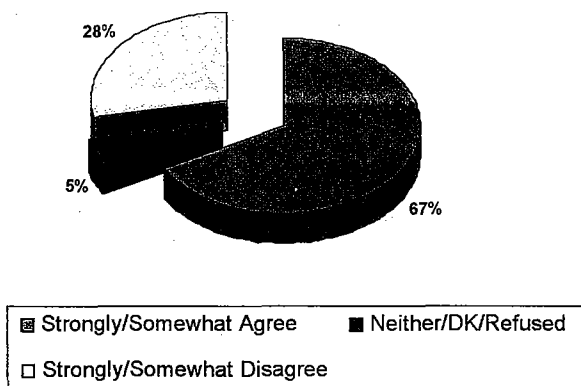
## 2 Government should invest in existing technology that helps first responders.

Put simply, when it comes to emergency response, new technology to improve communication is not considered a luxury. It is a necessity. Consider the following:

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**"If the technology exists to help first responders communicate more effectively with each other, the government should invest in the technology regardless of the cost."**

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Even without educating the public about first responders and their crucial role in securing public safety, people appreciate their contributions and are eager to give them whatever they require. Fully two thirds of Americans (67%) agree with this statement, while only 28% disagree. What is truly amazing about this result is in the last four words "*regardless of the cost.*" For two out of three Americans to still demand the investment, that

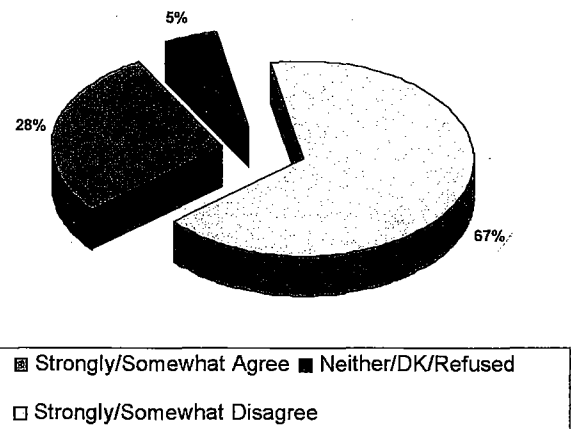
says a lot about public priorities. Moreover, if you were to re-cast the statement to say "*at reasonable cost,*" support would be even higher.

## 3 When it comes to combating terrorism, the government still matters. 9/11 is NOT ancient history.

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**"There have been no major terrorist attacks in the United States since September 11th, 2001. We do not need to spend so much taxpayer money on emergency response personnel and technology."**

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Americans do not want their government dropping its guard two years or two decades after an event like that. Not their local government, not their state government, and not their federal government.

**EXCERPTS FROM "AMERICA STILL UNPREPARED – AMERICA STILL IN DANGER,  
REPORT OF AN INDEPENDENT TASK FORCE, SPONSORED BY THE COUNCIL ON  
FOREIGN RELATIONS." OCTOBER 2002**

**The Problem:**

"A year after September 11, 2001, America remains dangerously unprepared to prevent and respond to a catastrophic terrorist attack on U.S. soil. In all likelihood, the next attack will result in even greater casualties and widespread disruption to American lives and the economy...

In virtually every major city and county in the United States, no interoperable communications system exists to support police, fire departments, and county, state, regional, and federal response personnel during a major emergency. Radio frequencies are not available to support the post-incident communication demands that will be placed on them, and most cities have no redundant systems to use as backups. Portable radios will not work in high-rise buildings unless the buildings are equipped with repeater systems. Most U.S. cities have separate command-and-control functions for their police and fire departments, and little to no coordination exists between the two organizations. Furthermore, with few exceptions, first responder commanders do not have access to secure radios, telephones, or video-conferencing capabilities that can support communications with county, state, and federal emergency preparedness officials or National Guard leaders."

**The Solution:**

"Fund and deploy commercial off-the-shelf technologies that can integrate multiple radio platforms to support interoperable communications, including the ability to coordinate the flow of voice, image, and electronic information among responding agencies."





## THE BUCK STOPS WHERE?

**"When you're faced with a critical incident, whether it's a terrorist act or a natural disaster, you've simply got to have reliable, interoperable, communications. This is part of the tragic lesson taught to us by September 11.**

**In an emergency, there's not time to think, "How can I get through?" You need one-touch, instant connection. You need to be able to communicate directly within your agencies and across jurisdictions – in order to share accurate, real-time information.**

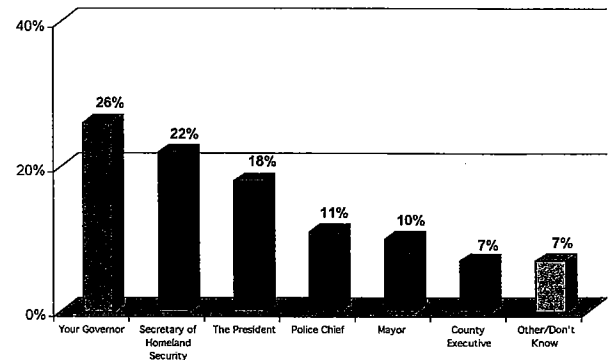
**No one should have to suffer through an event like the one on 9/11. But every community has its emergency needs. Day-to-day, it's easy to underestimate the real value of interoperable communications. First responders, however, cannot afford to do this."**

**Mayor Rudy Giuliani**

When it comes to homeland security, the key attribute in understanding what Americans think and why can be summarized in a single word: responsibility. But what does the public expect from each level of government? Whom does the public hold responsible for making the decisions regarding their personal security? Who do the people think are best equipped to address the challenges of first responders?

The answer is actually quite complicated and diverse.

*And who should be held accountable for making sure that first responders and emergency personnel have the technology and equipment to do their jobs effectively?*



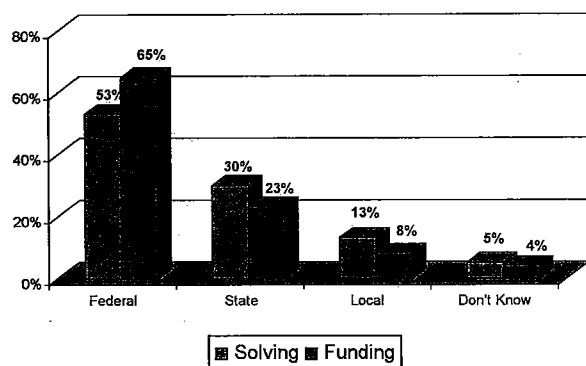
This is part of a clear pattern that emerges throughout the survey. Not too surprisingly with an issue of national prominence, the interoperability buck starts and stops at the top of the chain of command, with the federal government. Fully, 40% charge federal officials with being accountable, while 26% put their faith and trust in the hands of their governor, and 28% look to more local county and municipal officials.

It should be noted, however, that state and local expectations combined total more than the federal government. Homeland security and interoperability transcend traditional federal-local boundaries. To the American public, all levels of government play a role in securing their safety, and all levels of government will be held responsible if something goes wrong.

However, when the proverbial dollar sign is introduced into the equation, more eyes look to Washington than to state and local institutions combined. When it comes to large-scale emergencies, Americans expect Washington to have in place large-scale capabilities that

are integrated, streamlined, and – of course – interoperable. It is intuitively clear to people that the solution should come from the federal level. The states may have the responsibility for implementing the solution at the most local level, but it is the federal government that is expected to solve the problems and provide funding for those solutions.

***Which level of government should be primarily responsible for SOLVING/FUNDING the technological challenges of interoperability, that is, for providing the communications devices so that Police, Fire and Emergency Managers can communicate in times of crisis?***



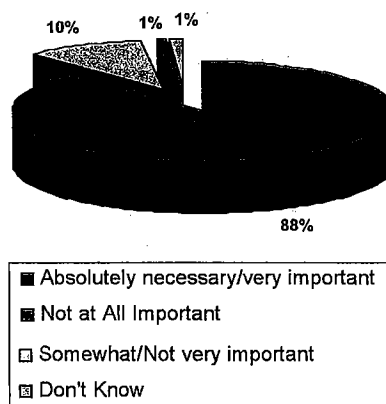
Simply stated, the public expects the national government to protect the national interests across the nation. The American people want and expect those in charge to re-establish America as the leader in technology, infrastructure, safety, and security. And they will settle for nothing less.

Well, more accurately, 88% of America will settle for nothing less. We provided respondents with an accepted definition of interoperability: *"the guaranteed ability to connect instantly with one another through reliable and secure communications regardless of where they are and regardless of the crisis."* We then asked how important it was to keep *"interoperability*

*functioning at 100% during a crisis."* The response was as close to unanimity as anything we polled. The public fully understands why it's important that emergency personnel should be able to communicate with each other.

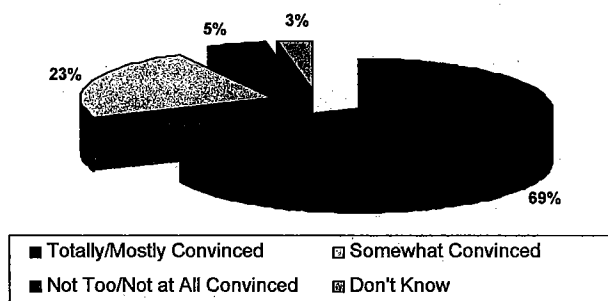
Moreover, this is not an abstract issue to most Americans. On the contrary, the public overwhelmingly believes that interoperability between first responders would actually save tangible lives. Complaints by police and fire personnel that they cannot communicate effectively with each other may have been ignored by local, state and federal officials but those complaints are being heard loud and clear by the American people – and they don't like and will not accept the status quo.

***There is a phrase called interoperability – the idea that all public safety officials – police, fire, emergency personnel – should have the guaranteed ability to connect instantly with one another through reliable and secure communications regardless of where they are and regardless of the crisis. How important would you say it was to keep interoperability functioning at 100% during a crisis?***

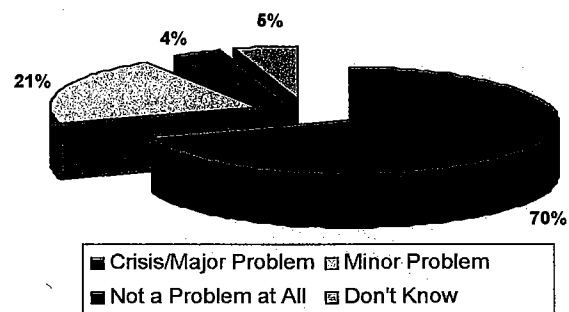


***"Fully 88% of Americans believe 100% Interoperability is very important or absolutely necessary."***

*How convinced are you that greater interoperability between police, fire and emergency services first responders would actually save lives?*



*How much of a problem is it that emergency personnel cannot always communicate with each other in emergency situations? Would you say that is a ...*



**"Message to Washington: spend whatever it takes to keep us safe."**

## MESSAGE TO WASHINGTON: THE POLITICAL IMPACT OF INTEROPERABILITY

FDR never had to lobby the American people to support entering the Second World War. The billowing smoke from the battered battleships at Pearl Harbor more than made the case for American sacrifice in the name of security. Even throughout most of the Cold War, with rare exceptions, US presidents did not have to labor to make the case for opposing communist expansion.

The war on terror is different. There are no enemy capitals to capture. No treaties to be signed. No discernable finish line. No end in sight. It requires a vigilance unlike anything ever faced by modern day America. The urgency is there – and so is the political will.

We asked Americans whether they would be more or less likely to vote for state or local political candidates who "voted against funding for the latest technology and new equipment for emergency personnel [making] the case that the state or federal government just can't afford it." Frankly, we tilted the question to give respondents every financial and economic reason to oppose additional spending on interoperability.

The response was dramatic. The budgetary constraints on federal, state and local officials carry no water with the American electorate. **Their message: spend whatever it takes to keep us safe.** Consider the following:

***Only 18% of Americans are more likely to listen to financial arguments and vote FOR a politician (either federal or state) who voted AGAINST funding equipment for emergency personnel.***

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*Conversely, more than half (52%) of Americans are LESS likely to support a candidate who votes AGAINST funding for the latest technology and new equipment for emergency personnel.*

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A three to one ratio in favor of spending whatever it takes to utilize the latest technology is highly significant. Emergency response capabilities in general and interoperability in particular are of the highest priority and no compromise in safety or communication will be accepted. Even Social Security, the most popular government program in modern history doesn't generate that level of support for additional funding.



## METHODOLOGY

The purpose of this poll was to measure the perceptions of the American people with regards to the important issues surrounding the communication capabilities of first-responders. It was not intended to solicit support for a specific reform or communications infrastructure.

A total of 800 Americans aged 18 and older were interviewed by telephone using traditional random digit dialing methodology on August 25, 2003. The margin of error for this survey was +3.5%. Interviews lasted approximately eight minutes and consisted of both open- and close-ended questions. Those interviewed represent an accurate cross-section of the American people. The sample was stratified by gender and geographic region of the country.

## CONCLUSIONS

Americans are only now coming to grips with the new reality that natural disasters are not the only threat to personal security. We have awoken from the dizzying years of unparalleled world dominance with a new purpose and determination to achieve the best but prepare for the worst. And we expect nothing less from our leaders at all levels of government. We have the technology to make interoperability a reality. We have a population ready to adjust their priorities and foot the bill. All that is left is the leadership to make it happen.

*There are five essential conclusions from this comprehensive study of the American psyche:*

- 1 Above everything else, the American people want their government to secure their safety.** Liberty and the pursuit of happiness are surely priorities, but both fall behind life itself.
- 2 The American people want and expect 100% interoperability.** They know the technology exists. Now they want the political will to get it done before the next big crisis.
- 3 The buck starts and stops with the federal government.** Americans expect the solution, the funding and the proper regulations to come from Washington. Give local communities the ability to implement but Washington must start the process now.
- 4 The price is well worth the result.** In these times of budgetary woes, the American people are ready and willing to invest whatever it takes to guarantee their security.
- 5 Failure is unacceptable.** Hell hath no fury like a voter scorned. Should another national tragedy strike and interoperability fail, heads will surely roll.

Americans are still committed to being the very best, most advanced, safest place in the world, and they fully understand the role and importance of interoperability in securing their future. Interoperability is not just another political project. It is an issue of life and death. And that's why guaranteed interoperability matters so much to so many people.

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**"We had almost reached Murray Street, four blocks north of the World Trade Center, when Tower I really did fall, at about 10:28... How strange, I thought - New York City had become a battlefield... Our cell phones were all but dead. The landlines throughout Lower Manhattan were dead. Every entrance to the city was closed. No subways or buses were running, and there wasn't a taxi in sight. There was no way to find out what was going on. The World Trade Center towers held many of the antennae that broadcast cellular phone and television signals, both of which were reduced to minimal capacity. It was primitive, shocking, surreal. And above the dust and soot and glass that still rained down was the same perfect blue sky."**

**-Mayor Rudy Giuliani**

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## **Appendix B**

# Broad Support for the Consensus Plan

The signatories to the Consensus Plan represent more than **90 percent** of all affected licensees in the 800 MHz Land Mobile Radio band.

## Consensus Parties

### *Every Leading Public Safety Organization*

Association of Public Safety Communications  
Officials-International  
International Association of Chiefs of Police  
International Association of Fire Chiefs, Inc.  
International Municipal Signal Association  
Major Cities Chiefs Association  
Major County Sheriffs' Association  
National Sheriffs' Association

### *Private Wireless & CMRS*

Aeronautical Radio, Inc.  
American Mobile Telecom. Assn.  
American Petroleum Institute  
Association of American Railroads  
Forest Industries Telecommunications  
Industrial Telecommunications Association  
PCIA – The Wireless Infrastructure Assn.  
Taxicab, Limousine and Paratransit Assn.  
National Stone, Sand and Gravel Assn.  
Nextel Communications

## Other Supporters

### *Public Safety & Local Government*

National Association of Counties  
Nat'l Assn. of Telecom. Officers & Advisors  
National League of Cities  
U.S. Conference of Mayors  
National Public Safety Telecommunications Council  
Amer. Assn. of State Highway and Transp. Officials  
Forestry Conservation Communications Association  
International Association of Emergency Managers  
National Association of State Foresters  
New York State Association of P.B.A.s  
New York State Fire Departments  
City of Ft. Lauderdale, Florida  
Hall County, Georgia  
Fremont, California, Police Department  
Sacramento, CA Police, Fire & Local Gov't.  
Village of Woodridge, Illinois  
City of Tallahassee, Florida  
Ohio MARCS Program  
City of Boston, Massachusetts  
Dane County, Wisc. Public Safety Communications  
New York State Association of Fire Chiefs  
Greater Boston Police Council, Inc.  
Cambridge, Massachusetts, Fire Department

Orange County, Florida  
City and County of Denver, Colorado  
City of Salem, Oregon – Communications Division  
Bay County, Florida, Emergency Services  
Orange County, California  
Contra Costa County, CA Fire Protection District  
Columbus, Ohio, Dept. of Public Safety  
Hamilton County, Ohio, Communications Ctr.  
North Myrtle Beach, South Carolina  
Ogden City, Utah  
Jones County Emerg. Oper. Ctr., Laurel, MS  
Pickaway County, Ohio  
Lambert-St. Louis Int'l Airport  
City of Provo, Utah  
Lee County, Florida, County Commissioners  
Chesapeake, Virginia, Sheriff's Office  
New Hartford, New York Central Dispatch  
Leon County, Florida Sheriff's Office  
Conn. Dept. of Public Safety Citizens Advisory Bd.  
Metrofire, 34 Massachusetts Fire Departments  
New York State Office for Technology  
City of Revere, Massachusetts  
President Pro Tempore, The Florida Senate



### ***Individual Grass Roots Public Safety Support***

Over 500 members of the Int'l Assn. of Chiefs of Police and the Major Cities Chiefs Assn., representing chiefs of police and other law enforcement professionals throughout the country, have endorsed the Consensus Plan

### ***Over 45 Private Wireless & Equipment Providers***

Federal Express	Graybill Electronics	KLL Wireless
Northwest Airlines	Highland Wireless Services	New York Communications
United Airlines	Miller Communications	Company
IE Communications	Monroe Communications	North Sight Communications
Intel Corporation	Ohio Valley 2-Way Radio	Pete's Communications
Lucent Technologies	P&R Communications Service	SR Communications Associates
Motient Communications	Radio Service Company	Ragan Communications
RACOM Corp.	Sutter Buttes Communications	Skyline Communications
RA-Comm	Wells Communications Service	Smartlink Communications
Skitronics	Bell Interconnect	Blue Mountain Communications
Action Communication	Commtronics of Virginia	Business Radio, Inc.
Apache Corporation	Communications and Industrial	G & P Communications
Battles Communications	Electronic Corporation	Business Communications Corp.
Telecommunications NA, BP	CNY, Inc.	Coastal Electronic
BearCom	JPJ Electronic Communications	PPG Industries, Inc.
Columbia Communications	Ka-Comm	
	Louisiana Mid-Continent Oil and	
	Gas Association	

## **Appendix C**

# Nextel vs. Cellular & PCS Companies: Key Cost Data

Source: Table 10, Verizon Study

As of Year-End 2002 and Calendar 2002

Company	Year-end 2002 SUBs (000s)	MOU/SUB per Month (1)	2002 Gross PP&E (\$MM)	Gross PP&E per SUB	Gross PP&E per Annualized MOU	2002 Net PP&E (\$MM)	Net PP&E per SUB	Net PP&E per Annualized MOU	Year-end 2002 Cell Sites	Cell Sites per 1,000 SUBs	Q4 '02 average # of Cell Sites	Q4 '02 MOU/Cell Site per Month	Q4 '02 Cell Sites per MM MOUs/month
Nextel	10,612	621	\$13,925	\$1,312	\$0.176	\$8,918	\$840	\$0.113	16,300	1.54	16,190	407	2.46
Nextel Partners	878	576	\$1,222	\$1,392	\$0.201	\$1,000	\$1,139	\$0.165	3,317	3.78	3,262	155	6.45
Sprint PCS	14,760	644	\$16,978	\$1,150	\$0.149	\$11,897	\$806	\$0.104	19,300	1.31	19,000	500	2.00
T-Mobile	9,916	552	\$6,895	\$695	\$0.105	\$4,488	\$453	\$0.068	17,600	1.77	17,600	311	3.22
Leap Wireless	1,600	1,198	\$1,505	\$941	\$0.065	\$1,107	\$692	\$0.048	2,446	1.53	2,435	787	1.27
Triton PCS	830	583	\$1,140	\$1,373	\$0.196	\$797	\$960	\$0.137	2,218	2.67	2,199	220	4.55
Alamosa	622	435	\$581	\$934	\$0.179	\$459	\$738	\$0.141	1,509	2.43	1,496	181	5.52
Airgate/iPCS	555	547	\$512	\$923	\$0.141	\$399	\$719	\$0.110	807	1.45	805	377	2.65
US Unwired	551	N/A	\$670	\$1,216	N/A	\$484	\$878	N/A	1,796	3.26	N/A	N/A	N/A
Ubiquitel	257	617	\$339	\$1,319	\$0.178	\$276	\$1,074	\$0.145	826	3.21	821	193	5.18
Verizon Wireless	32,491	382	\$30,642	\$943	\$0.206	\$17,073	\$525	\$0.115	18,457	0.57	18,379	675	1.48
Cingular	21,925	407	\$19,450	\$887	\$0.182	\$11,144	\$508	\$0.104	20,112	0.92	20,112	444	2.25
AT&T Wireless	20,859	483	\$24,073	\$1,154	\$0.199	\$16,263	\$780	\$0.135	21,064	1.01	20,374	494	2.02
Alltel Wireless	7,602	N/A	\$6,300	\$829	N/A	\$2,999	\$395	N/A	N/A	N/A	N/A	N/A	N/A
US Cellular	4,103	343	\$3,057	\$745	\$0.181	\$2,008	\$489	\$0.119	3,914	0.95	3,832	367	2.72
Western Wireless	1,198	394	\$1,595	\$1,331	\$0.281	\$861	\$719	\$0.152	1,250	1.04	1,250	378	2.65
Dobson	880	162	\$519	\$590	\$0.304	\$301	\$342	\$0.176	945	1.07	936	152	6.58
Rural Cellular	667	N/A	\$413	\$619	N/A	\$241	\$361	N/A	732	1.10	722	N/A	N/A
Centennial Cellular	603	986	N/A	N/A	N/A	\$388	\$643	\$0.054	704	1.17	701	848	1.18
<b>Totals/Weighed Averages</b>	<b>130,909</b>	<b>452</b>	<b>129,816</b>	<b>\$996</b>	<b>\$0.184</b>	<b>\$81,103</b>	<b>\$620</b>	<b>\$0.114</b>	<b>133,297</b>	<b>1.02</b>	<b>130,114</b>	<b>455</b>	<b>2.20</b>
<b>Totals/Avg Cellular &amp; PCS (excl. NXTP)</b>	<b>119,419</b>	<b>436</b>	<b>114,669</b>	<b>\$965</b>	<b>\$0.184</b>	<b>71,185</b>	<b>\$596</b>	<b>\$0.114</b>	<b>113,680</b>	<b>0.95</b>	<b>110,662</b>	<b>471</b>	<b>2.12</b>
<b>Nextel</b>	<b>10,612</b>	<b>621</b>	<b>13,925</b>	<b>1,312</b>	<b>\$0.176</b>	<b>8,918</b>	<b>840</b>	<b>\$0.113</b>	<b>16,300</b>	<b>1.54</b>	<b>16,190</b>	<b>407</b>	<b>2.46</b>
<b>Nextel vs. Cellular &amp; PCS average, higher (lower) by:</b>				<b>36%</b>	<b>-4%</b>	<b>41%</b>	<b>-1%</b>						

## **Appendix D**

	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
Total Subscribers (000) <sup>(1)</sup>	140,767	155,267	169,017	182,017	192,767	201,267	207,767	212,767	217,017
<u>Industry Revenue Forecast (\$MM)</u>									
Current generation data service <sup>(1)</sup>		\$1,291	\$2,706	\$4,150	\$4,978	\$5,621	\$6,385	\$7,004	\$7,545
Next generation data service <sup>(1)</sup>		\$0	\$0	\$164	\$684	\$1,607	\$2,583	\$3,219	\$3,677
Voice		<u>\$94,287</u>	<u>\$101,117</u>	<u>\$107,167</u>	<u>\$112,372</u>	<u>\$116,987</u>	<u>\$120,099</u>	<u>\$122,851</u>	<u>\$125,243</u>
Total		\$95,578	\$103,823	\$111,481	\$118,034	\$124,215	\$129,067	\$133,074	\$136,465
Total ARPU <sup>(2)</sup>		\$53.81	\$53.36	\$52.93	\$52.49	\$52.54	\$52.59	\$52.74	\$52.92
<u>Revenue Contribution:</u>									
Current generation data service		1.4%	2.6%	3.7%	4.2%	4.5%	4.9%	5.3%	5.5%
Next generation data service		0.0%	0.0%	0.1%	0.6%	1.3%	2.0%	2.4%	2.7%
Voice		<u>98.6%</u>	<u>97.4%</u>	<u>96.1%</u>	<u>95.2%</u>	<u>94.2%</u>	<u>93.1%</u>	<u>92.3%</u>	<u>91.8%</u>
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Source:**

(1) Banc of America Research Report "Wireless Services Industry", August 27, 2003

(2) Table 12 in Verizon Study

## **Appendix E**

Verizon Wireless DCF Valuation Correction								
Adjustment for Income Taxes								
As of December 31, 2002								
(\$ millions)								
Year	1	2	3	4	5	6	7	8
	<u>2003E</u>	<u>2004E</u>	<u>2005E</u>	<u>2006E</u>	<u>2007E</u>	<u>2008E</u>	<u>2009E</u>	<u>2010E</u>
Gain (Loss) from Operations (EBIT)-Average <sup>(1)</sup>	\$4,514	\$5,815	\$5,968	\$6,451	\$7,000	\$7,233	\$6,498	\$7,039
Income Taxes Paid - Average <sup>(1)</sup>	\$115	\$119	\$123	\$136	\$142	\$140	\$155	\$170
Adjusted Tax Rate	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
Calculated Income Taxes Paid	\$1,715	\$2,210	\$2,268	\$2,451	\$2,660	\$2,749	\$2,469	\$2,675
Difference of Income Taxes Paid	\$1,600	\$2,091	\$2,145	\$2,315	\$2,518	\$2,609	\$2,314	\$2,505
Discount Rate <sup>(1)</sup>	11.0%							
Present Value Factor	Mid Yr	0.9492	0.8551	0.7704	0.6940	0.6252	0.5633	0.5075
		0.4572						
Present Value Free Cash Flow Adjustment	(\$1,519)	(\$1,788)	(\$1,652)	(\$1,607)	(\$1,574)	(\$1,469)	(\$1,174)	(\$1,145)
<b>NPV of Adjustment (2003-2010)</b>	<b>\$</b>	<b>(11,929)</b>						
<b>Income approach weight</b>		<b>75%</b>						
<b>BEV adjustment</b>	<b>\$</b>	<b>(8,947)</b>						

<sup>(1)</sup> As reported in Exhibit C-1 in the Verizon Study

<b>Cingular Wireless DCF Valuation Correction</b> <b>Adjustment for Income Taxes</b> <b>As of December 31, 2002</b> <b>(\$ millions)</b>									
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Year		1	2	3	4	5	6	7	8
		<u>2003E</u>	<u>2004E</u>	<u>2005E</u>	<u>2006E</u>	<u>2007E</u>	<u>2008E</u>	<u>2009E</u>	<u>2010E</u>
Gain (Loss) from Operations (EBIT)-Average <sup>(2)</sup>		\$1,470	\$2,688	\$2,952	\$3,260	\$3,530	\$3,681	\$2,067	\$2,207
Income Taxes Paid - Average <sup>(2)</sup>		\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10
Adjusted Tax Rate		38.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
Calculated Income Taxes Paid		\$559	\$1,021	\$1,122	\$1,239	\$1,341	\$1,399	\$785	\$839
Difference of Income Taxes Paid		\$549	\$1,011	\$1,112	\$1,229	\$1,331	\$1,389	\$775	\$829
Discount Rate <sup>(2)</sup>	11.0%								
Present Value Factor	Mid Yr	0.9492	0.8551	0.7704	0.6940	0.6252	0.5633	0.5075	0.4572
Present Value Free Cash Flow Adjustment		(\$521)	(\$865)	(\$856)	(\$853)	(\$832)	(\$782)	(\$394)	(\$379)
<b>NPV of Adjustment (2003-2010)</b>		<b>\$ <u>(5,482)</u></b>							
<b>Income approach weight</b>		<b>75%</b>							
<b>BEV adjustment</b>		<b>\$ <u>(4,111)</u></b>							

<sup>(2)</sup> As reported in Exhibit C-2 in the Verizon Study



**As of December 31, 2002**

<sup>(3)</sup> As reported in Exhibit C-3 in the Verizon Study

## **Appendix F**

# Customer Relationship Asset Value

WACC 11%

NPV per sub	\$540
Total Customer Relationship Value (\$ billions)	\$70.7

Pre-CPGA								
OIBDA margin								
After tax								
Year	beg subs	churn	deacts	end subs	ARPU (1)	margin (1)	tax rate	cashflow
1	130,909,000	2.60%	35,331,841	95,577,159	\$ 53.81	57.6%	38%	\$26,113,801
2	95,577,159	2.58%	25,624,081	69,953,078	\$ 53.36	58.1%	38%	\$19,090,277
3	69,953,078	2.50%	18,248,629	51,704,449	\$ 52.93	58.5%	38%	\$14,013,276
4	51,704,449	2.47%	13,347,151	38,357,298	\$ 52.49	58.7%	38%	\$10,322,811
5	38,357,298	2.43%	9,761,728	28,595,570	\$ 52.72	60.4%	38%	\$7,930,936
6	28,595,570	2.43%	7,277,420	21,318,150	\$ 52.59	60.4%	38%	\$5,897,976
7	21,318,150	2.43%	5,425,356	15,892,794	\$ 52.74	61.5%	38%	\$4,489,819
8	15,892,794	2.43%	4,044,631	11,848,163	\$ 52.92	62.4%	38%	\$3,407,758
9	11,848,163	2.40%	2,982,754	8,865,408	\$ 53.88	63.4%	38%	\$2,632,175
10	8,865,408	2.40%	2,231,851	6,633,557	\$ 53.88	62.4%	38%	\$1,938,464
11	6,633,557	2.40%	1,669,986	4,963,571	\$ 53.88	62.4%	38%	\$1,450,459
12	4,963,571	2.40%	1,249,570	3,714,001	\$ 53.88	62.4%	38%	\$1,085,309
13	3,714,001	2.40%	934,993	2,779,007	\$ 53.88	62.4%	38%	\$812,084
14	2,779,007	2.40%	699,610	2,079,397	\$ 53.88	62.4%	38%	\$607,643
15	2,079,397	2.40%	523,485	1,555,913	\$ 53.88	62.4%	38%	\$454,670
16	1,555,913	2.40%	391,698	1,164,214	\$ 53.88	62.4%	38%	\$340,208
17	1,164,214	2.40%	293,089	871,125	\$ 53.88	62.4%	38%	\$254,561
18	871,125	2.40%	219,304	651,821	\$ 53.88	62.4%	38%	\$190,476
19	651,821	2.40%	164,095	487,726	\$ 53.88	62.4%	38%	\$142,524
20	487,726	2.40%	122,784	364,942	\$ 53.88	62.4%	38%	\$106,644
21	364,942	2.40%	91,874	273,069	\$ 53.88	62.4%	38%	\$79,796
22	273,069	2.40%	68,745	204,324	\$ 53.88	62.4%	38%	\$59,708
23	204,324	2.40%	51,438	152,886	\$ 53.88	62.4%	38%	\$44,676
24	152,886	2.40%	38,489	114,397	\$ 53.88	62.4%	38%	\$33,429
25	114,397	2.40%	28,799	85,598	\$ 53.88	62.4%	38%	\$25,013
26	85,598	2.40%	21,549	64,049	\$ 53.88	62.4%	38%	\$18,716
27	64,049	2.40%	16,124	47,925	\$ 53.88	62.4%	38%	\$14,005
28	47,925	2.40%	12,065	35,860	\$ 53.88	62.4%	38%	\$10,479
29	35,860	2.40%	9,028	26,832	\$ 53.88	62.4%	38%	\$7,841
30	26,832	2.40%	6,755	20,077	\$ 53.88	62.4%	38%	\$5,867
31	20,077	2.40%	5,054	15,023	\$ 53.88	62.4%	38%	\$4,390
32	15,023	2.40%	3,782	11,241	\$ 53.88	62.4%	38%	\$3,285
33	11,241	2.40%	2,830	8,411	\$ 53.88	62.4%	38%	\$2,458
34	8,411	2.40%	2,117	6,294	\$ 53.88	62.4%	38%	\$1,839
35	6,294	2.40%	1,584	4,709	\$ 53.88	62.4%	38%	\$1,376
36	4,709	2.40%	1,186	3,524	\$ 53.88	62.4%	38%	\$1,030
37	3,524	2.40%	887	2,637	\$ 53.88	62.4%	38%	\$770
38	2,637	2.40%	664	1,973	\$ 53.88	62.4%	38%	\$576
39	1,973	2.40%	497	1,476	\$ 53.88	62.4%	38%	\$431
40	1,476	2.40%	372	1,105	\$ 53.88	62.4%	38%	\$323
41	1,105	2.40%	278	826	\$ 53.88	62.4%	38%	\$242
42	826	2.40%	208	618	\$ 53.88	62.4%	38%	\$181
43	618	2.40%	156	463	\$ 53.88	62.4%	38%	\$135
44	463	2.40%	116	346	\$ 53.88	62.4%	38%	\$101
45	346	2.40%	87	259	\$ 53.88	62.4%	38%	\$76
46	259	2.40%	65	194	\$ 53.88	62.4%	38%	\$57
47	194	2.40%	49	145	\$ 53.88	62.4%	38%	\$42
48	145	2.40%	37	109	\$ 53.88	62.4%	38%	\$32
49	109	2.40%	27	81	\$ 53.88	62.4%	38%	\$24
50	81	2.40%	20	61	\$ 53.88	62.4%	38%	\$18
51	61	2.40%	15	45	\$ 53.88	62.4%	38%	\$13
52	45	2.40%	11	34	\$ 53.88	62.4%	38%	\$10
53	34	2.40%	9	25	\$ 53.88	62.4%	38%	\$7
54	25	2.40%	6	19	\$ 53.88	62.4%	38%	\$6
55	19	2.40%	5	14	\$ 53.88	62.4%	38%	\$4
56	14	2.40%	4	11	\$ 53.88	62.4%	38%	\$3
57	11	2.40%	3	8	\$ 53.88	62.4%	38%	\$2
58	8	2.40%	2	6	\$ 53.88	62.4%	38%	\$2
59	6	2.40%	2	4	\$ 53.88	62.4%	38%	\$1
60	4	2.40%	1	3	\$ 53.88	62.4%	38%	\$1
61	3	2.40%	1	3	\$ 53.88	62.4%	38%	\$1
62	3	2.40%	1	2	\$ 53.88	62.4%	38%	\$1
63	2	2.40%	0	1	\$ 53.88	62.4%	38%	\$0
64	1	2.40%	0	1	\$ 53.88	62.4%	38%	\$0
65	1	2.40%	0	1	\$ 53.88	62.4%	38%	\$0

(1) Based on Wireless Industry Statistics Forecast provided on table 12 of the Verizon Study:  
with year 1 above referenced as 2003

(1) CPGA related costs are excluded from projected future cashflows since the customer already exist

## **Appendix G**

## Tiered Pricing Model

Based on the recent Verizon Wireless transactions, a tiered pricing model was developed in order to estimate the value of a national license comprised of 487 BTAs. The tiered pricing model takes into account actual market behavior in separate spectrum transactions to calculate a more realistic average spectrum price than that obtainable from any separate transaction.

The following recent transactions are used to calculate an average national spectrum price:

- Northcoast transaction consisting of 50 BTAs with an average value of \$1.58 per MHz-pop
- Pittsburgh, PA BTA transaction with an average value of \$0.42 per MHz-pop
- Lebanon, NH BTA transaction with an average value of \$0.25 per MHz-pop

The Northcoast transaction included very large BTAs – including New York – and excluded a large number of very small BTAs, which drove up the average price. The Pittsburgh and Lebanon purchases indicate that carriers value smaller market less *on a per-pop basis* than larger markets. This is completely rational as there are greater efficiencies in operating in larger markets, which in turn make these markets more profitable for carriers to serve. Because they are more profitable on a per-pop basis, the most populous markets would have a greater per-pop value than smaller markets.

To determine the amount that Verizon Wireless was willing to pay for the largest markets in the Northcoast transaction, we can look to how much they were willing to pay for these two smaller markets in subsequent transactions. Based on the Verizon Wireless data, we can assume that they value spectrum in markets the size of Pittsburgh at \$0.42 per MHz-POP and markets the size of Lebanon at \$0.25 per MHz-POP. Based on these conservative assumptions, the following price tiers were used:

- For markets with populations less than Pittsburgh's and greater than Lebanon's, spectrum is valued at the Pittsburgh unit price of \$0.42 per MHz-POP
- For all markets with populations less than that of Lebanon, spectrum is valued at the Lebanon unit price of \$0.25 per MHz-POP.

These two price points were applied to the 50 BTAs that comprise the Verizon-Northcoast transaction. The price of spectrum in markets with populations greater than Pittsburgh was calculated subject to the constraint that the average price per pop-MHz is \$1.58 and the total value of the transaction is \$750M.

Based on these price points and methodology, the value of spectrum in markets with populations greater than Pittsburgh's (i.e. 2.4 M pops) was determined to be \$2.46 per pop-MHz. *This is without any offset for the network assets and customers that were also part of the deal.*

The three average price tiers obtained above were then applied to the 487 BTAs of a nationwide license. Using this model, the value of a nationwide 10 MHz license at 1.9 GHz is estimated at \$3.5 billion. This represents an average price of \$1.25 per pop-MHz.

**Appendix G-1**  
Analysis of Verizon-Northcoast Transaction

Market	Price / MHz		
	POPs	POP	Market Value
New York, NY	19,572,158	\$ 2.46	\$ 480,727,288.9
Boston, MA	4,365,640	\$ 2.46	\$ 107,227,945.0
Minneapolis, MN	3,290,228	\$ 2.46	\$ 80,813,898.3
Columbus, OH	1,692,240	\$ 0.42	\$ 7,107,408.0
Providence, RI	1,579,260	\$ 0.42	\$ 6,632,892.0
Rochester, NY	1,156,164	\$ 0.42	\$ 4,855,888.8
Hartford, CT	1,141,917	\$ 0.42	\$ 4,796,051.4
New Haven, CT	1,010,828	\$ 0.42	\$ 4,245,477.6
Lexington, KY	927,633	\$ 0.42	\$ 3,896,058.6
Toledo, OH	783,879	\$ 0.42	\$ 3,292,291.8
Syracuse, NY	778,872	\$ 0.42	\$ 3,271,262.4
Worcester, MA	750,963	\$ 0.42	\$ 3,154,044.6
Allentown, PA	734,107	\$ 0.42	\$ 3,083,249.4
Scranton, PA	680,226	\$ 0.42	\$ 2,856,949.2
Springfield, MA	680,014	\$ 0.42	\$ 2,856,058.8
Youngstown, OH	541,881	\$ 0.42	\$ 2,275,899.8
Canton, OH	534,503	\$ 0.42	\$ 2,244,912.6
Portland, ME	518,775	\$ 0.42	\$ 2,178,856.7
Poughkeepsie, NY	467,243	\$ 0.42	\$ 1,962,418.9
Rockford, IL	453,332	\$ 0.42	\$ 1,903,994.4
Huntington, WV	400,330	\$ 0.42	\$ 1,681,384.3
New London, CT	393,230	\$ 0.42	\$ 1,651,566.8
Binghamton, NY	392,310	\$ 0.42	\$ 1,647,699.9
Kalamazoo, MI	387,622	\$ 0.42	\$ 1,628,014.1
Bangor, ME	348,522	\$ 0.42	\$ 1,463,791.6
Lewiston, ME	243,867	\$ 0.42	\$ 1,024,240.1
Mansfield, OH	243,665	\$ 0.42	\$ 1,023,394.7
Wheeling, WV	241,931	\$ 0.42	\$ 1,016,108.9
Hyannis, MA	224,682	\$ 0.42	\$ 943,662.7
Clarksburg, WV	209,548	\$ 0.42	\$ 880,100.8
Bluefield, WV	202,422	\$ 0.42	\$ 850,172.4
Zanesville, OH	195,997	\$ 0.42	\$ 823,187.0
Wenatchee, WA	183,219	\$ 0.25	\$ 458,048.3
Waterville, ME	182,238	\$ 0.25	\$ 455,595.3
Williamsport, PA	178,196	\$ 0.25	\$ 445,489.0
Findlay, OH	162,275	\$ 0.25	\$ 405,688.3
Steubenville, OH	156,775	\$ 0.25	\$ 391,938.3
Pittsfield, MA	153,287	\$ 0.25	\$ 383,218.0
Sandusky, OH	146,321	\$ 0.25	\$ 365,802.3
Athens, OH	136,250	\$ 0.25	\$ 340,626.0
Glens Falls, NY	130,393	\$ 0.25	\$ 325,982.3
Keene, NH	122,880	\$ 0.25	\$ 307,199.8
East Liverpool, OH	119,104	\$ 0.25	\$ 297,759.0
Ashtabula, OH	109,803	\$ 0.25	\$ 274,507.8
New Castle, PA	105,871	\$ 0.25	\$ 264,676.5
Stroudsburg, PA	105,280	\$ 0.25	\$ 263,199.8
Chillicothe, OH	102,937	\$ 0.25	\$ 257,342.3
Portsmouth, OH	102,692	\$ 0.25	\$ 256,729.0
Marion, OH	101,225	\$ 0.25	\$ 253,063.3
Meadville, PA	94,786	\$ 0.25	\$ 236,964.8

<b>Total</b>	<b><u>47,537,519</u></b>	<b><u>\$ 750,000,000.0</u></b>
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**Appendix G-2**  
**National License Valuation**  
Based upon 2003 Transactions Reported by Verizon Wireless

Market	POPs	Price / MHz POP	Market Value
New York, NY	19,572,158	\$ 2.46	\$ 481,475,087
Los Angeles, CA	16,308,096	\$ 2.46	\$ 401,179,162
Chicago, IL	9,062,369	\$ 2.46	\$ 222,934,277
San Francisco, CA	7,222,097	\$ 2.46	\$ 177,663,586
Philadelphia, PA	6,186,657	\$ 2.46	\$ 152,191,762
Dallas, TX	5,570,240	\$ 2.46	\$ 137,027,904
Houston, TX	5,040,329	\$ 2.46	\$ 123,992,093
Detroit, MI	4,939,878	\$ 2.46	\$ 121,520,999
Washington, DC	4,768,659	\$ 2.46	\$ 117,309,011
Atlanta, GA	4,406,050	\$ 2.46	\$ 108,388,830
Boston, MA	4,365,640	\$ 2.46	\$ 107,394,744
Miami, FL	3,908,147	\$ 2.46	\$ 96,140,416
Phoenix, AZ	3,463,122	\$ 2.46	\$ 85,192,801
Minneapolis, MN	3,290,228	\$ 2.46	\$ 80,939,609
Seattle, WA	3,133,697	\$ 2.46	\$ 77,088,946
Cleveland, OH	2,952,746	\$ 2.46	\$ 72,637,552
St Louis, MO	2,872,460	\$ 2.46	\$ 70,662,516
San Diego, CA	2,766,907	\$ 2.46	\$ 68,065,912
Denver, CO	2,713,923	\$ 2.46	\$ 66,762,506
Tampa, FL	2,592,816	\$ 2.46	\$ 63,783,274
Baltimore, MD	2,592,313	\$ 2.46	\$ 63,770,900
Pittsburgh, PA	2,474,438	\$ 0.42	\$ 10,392,640
Cincinnati, OH	2,170,768	\$ 0.42	\$ 9,117,226
Portland, OR	2,106,529	\$ 0.42	\$ 8,847,422
Charlotte, NC	2,072,900	\$ 0.42	\$ 8,706,180
Kansas City, MO	2,049,447	\$ 0.42	\$ 8,607,677
Sacramento, CA	1,999,141	\$ 0.42	\$ 8,396,392
San Antonio, TX	1,856,320	\$ 0.42	\$ 7,796,544
Milwaukee, WI	1,786,336	\$ 0.42	\$ 7,502,611
Norfolk, VA	1,768,692	\$ 0.42	\$ 7,428,506
Nashville, TN	1,761,799	\$ 0.42	\$ 7,399,556
Orlando, FL	1,697,442	\$ 0.42	\$ 7,129,256
Columbus, OH	1,692,240	\$ 0.42	\$ 7,107,408
Salt Lake City, UT	1,629,189	\$ 0.42	\$ 6,842,594
Providence, RI	1,579,260	\$ 0.42	\$ 6,632,892
Las Vegas, NV	1,568,770	\$ 0.42	\$ 6,588,834
Memphis, TN	1,553,276	\$ 0.42	\$ 6,523,759
Indianapolis, IN	1,552,963	\$ 0.42	\$ 6,522,445
Louisville, KY	1,486,048	\$ 0.42	\$ 6,241,402
Raleigh, NC	1,475,053	\$ 0.42	\$ 6,195,223
Greensboro, NC	1,459,249	\$ 0.42	\$ 6,128,846
Oklahoma City, OK	1,435,750	\$ 0.42	\$ 6,030,150
New Orleans, LA	1,403,516	\$ 0.42	\$ 5,894,767
Jacksonville, FL	1,357,745	\$ 0.42	\$ 5,702,529
Austin, TX	1,325,029	\$ 0.42	\$ 5,565,122
Birmingham, AL	1,319,776	\$ 0.42	\$ 5,543,059
Richmond, VA	1,254,545	\$ 0.42	\$ 5,269,089
Dayton, OH	1,219,933	\$ 0.42	\$ 5,123,719
Buffalo, NY	1,205,470	\$ 0.42	\$ 5,062,974



**Appendix G-2**  
**National License Valuation**  
Based upon 2003 Transactions Reported by Verizon Wireless

Market	POPs	Price / MHz POP	Market Value
W Palm Beach, FL	1,157,871	\$ 0.42	\$ 4,863,058
Rochester, NY	1,156,164	\$ 0.42	\$ 4,855,889
Hartford, CT	1,141,917	\$ 0.42	\$ 4,796,051
Knoxville, TN	1,117,019	\$ 0.42	\$ 4,691,480
Grand Rapids, MI	1,079,340	\$ 0.42	\$ 4,533,228
Albany, NY	1,047,261	\$ 0.42	\$ 4,398,496
New Haven, CT	1,010,828	\$ 0.42	\$ 4,245,478
Omaha, NE	991,763	\$ 0.42	\$ 4,165,405
Little Rock, AR	962,251	\$ 0.42	\$ 4,041,454
Tulsa, OK	948,246	\$ 0.42	\$ 3,982,633
Lexington, KY	927,633	\$ 0.42	\$ 3,896,059
Fresno, CA	922,516	\$ 0.42	\$ 3,874,567
Greenville, SC	901,593	\$ 0.42	\$ 3,786,691
Tucson, AZ	843,746	\$ 0.42	\$ 3,543,733
Honolulu, HI	835,583	\$ 0.42	\$ 3,509,449
Albuquerque, NM	831,850	\$ 0.42	\$ 3,493,770
Des Moines, IA	804,543	\$ 0.42	\$ 3,379,081
Toledo, OH	783,879	\$ 0.42	\$ 3,292,292
Syracuse, NY	778,872	\$ 0.42	\$ 3,271,262
Savannah, GA	752,278	\$ 0.42	\$ 3,159,568
Worcester, MA	750,963	\$ 0.42	\$ 3,154,045
El Paso, TX	743,636	\$ 0.42	\$ 3,123,271
Spokane, Wa	741,519	\$ 0.42	\$ 3,114,380
Allentown, PA	734,107	\$ 0.42	\$ 3,083,249
Ft Wayne, IN	715,480	\$ 0.42	\$ 3,005,016
Kingsport, TN	708,987	\$ 0.42	\$ 2,977,745
Baton Rouge, LA	705,760	\$ 0.42	\$ 2,964,192
Harrisburg, PA	696,478	\$ 0.42	\$ 2,925,208
Madison, WI	682,098	\$ 0.42	\$ 2,864,812
Scranton, PA	680,226	\$ 0.42	\$ 2,856,949
Springfield, MA	680,014	\$ 0.42	\$ 2,856,059
Charleston, SC	679,429	\$ 0.42	\$ 2,853,602
Jackson, MS	677,489	\$ 0.42	\$ 2,845,454
Columbia, SC	668,081	\$ 0.42	\$ 2,805,940
Roanoke, VA	664,313	\$ 0.42	\$ 2,790,115
Fayetteville, NC	663,154	\$ 0.42	\$ 2,785,247
Mobile, AL	663,075	\$ 0.42	\$ 2,784,915
Macon, GA	662,293	\$ 0.42	\$ 2,781,631
Bakersfield, CA	661,645	\$ 0.42	\$ 2,778,909
Springfield, MO	660,151	\$ 0.42	\$ 2,772,634
Wichita, KS	656,056	\$ 0.42	\$ 2,755,435
Saginaw, MI	629,256	\$ 0.42	\$ 2,642,875
Sarasota, FL	616,601	\$ 0.42	\$ 2,589,724
Manchester, NH	616,081	\$ 0.42	\$ 2,587,540
Stockton, CA	608,263	\$ 0.42	\$ 2,554,705
Asheville, NC	608,250	\$ 0.42	\$ 2,554,650
Shreveport, LA	605,690	\$ 0.42	\$ 2,543,898
Augusta, GA	590,218	\$ 0.42	\$ 2,478,916
Chattanooga, TN	568,186	\$ 0.42	\$ 2,386,381

**Appendix G-2**  
**National License Valuation**  
Based upon 2003 Transactions Reported by Verizon Wireless

Market	POPs	Price / MHz POP	Market Value
Flint, MI	550,252	\$ 0.42	\$ 2,311,058
Corpus Christi, TX	549,987	\$ 0.42	\$ 2,309,945
Lafayette, LA	546,237	\$ 0.42	\$ 2,294,195
Youngstown, OH	541,881	\$ 0.42	\$ 2,275,900
Lansing, MI	538,668	\$ 0.42	\$ 2,262,405
Canton, OH	534,503	\$ 0.42	\$ 2,244,913
Charleston, WV	529,526	\$ 0.42	\$ 2,224,008
Ft Myers, FL	527,397	\$ 0.42	\$ 2,215,068
Evansville, IN	523,510	\$ 0.42	\$ 2,198,742
Portland, ME	518,775	\$ 0.42	\$ 2,178,857
Peoria, IL	501,207	\$ 0.42	\$ 2,105,071
Montgomery, AL	484,820	\$ 0.42	\$ 2,036,242
Salem, OR	484,068	\$ 0.42	\$ 2,033,086
Huntsville, AL	483,815	\$ 0.42	\$ 2,032,024
Reno, NV	483,207	\$ 0.42	\$ 2,029,469
Beaumont, TX	475,342	\$ 0.42	\$ 1,996,436
Poughkeepsie, NY	467,243	\$ 0.42	\$ 1,962,419
McAllen, TX	466,469	\$ 0.42	\$ 1,959,171
Lancaster, PA	465,104	\$ 0.42	\$ 1,953,438
Davenport, IA	461,615	\$ 0.42	\$ 1,938,783
Modesto, CA	460,876	\$ 0.42	\$ 1,935,678
Tallahassee, FL	460,859	\$ 0.42	\$ 1,935,609
York, PA	459,633	\$ 0.42	\$ 1,930,458
Boise, ID	458,153	\$ 0.42	\$ 1,924,244
Visalia, CA	454,729	\$ 0.42	\$ 1,909,862
Rockford, IL	453,332	\$ 0.42	\$ 1,903,994
Colorado Spring, CO	450,430	\$ 0.42	\$ 1,891,807
Lakeland, FL	445,920	\$ 0.42	\$ 1,872,865
Duluth, MN	440,848	\$ 0.42	\$ 1,851,562
Daytona Beach, FL	439,354	\$ 0.42	\$ 1,845,288
Appleton, WI	439,187	\$ 0.42	\$ 1,844,586
Melbourne, FL	438,876	\$ 0.42	\$ 1,843,278
Lubbock, TX	432,191	\$ 0.42	\$ 1,815,203
Anchorage, AK	427,837	\$ 0.42	\$ 1,796,917
Amarillo, TX	418,375	\$ 0.42	\$ 1,757,175
Santa Barbara, CA	406,569	\$ 0.42	\$ 1,707,589
Burlington, VT	406,041	\$ 0.42	\$ 1,705,371
Huntington, WV	400,330	\$ 0.42	\$ 1,681,384
New London, CT	393,230	\$ 0.42	\$ 1,651,567
Binghamton, NY	392,310	\$ 0.42	\$ 1,647,700
Salinas, CA	391,226	\$ 0.42	\$ 1,643,149
Kalamazoo, MI	387,622	\$ 0.42	\$ 1,628,014
Pensacola, FL	378,847	\$ 0.42	\$ 1,591,156
Columbus, GA	376,566	\$ 0.42	\$ 1,581,578
Ft Pierce, FL	375,407	\$ 0.42	\$ 1,576,709
Biloxi, MS	373,770	\$ 0.42	\$ 1,569,834
Reading, PA	370,175	\$ 0.42	\$ 1,554,736
South Bend, IN	363,903	\$ 0.42	\$ 1,528,393
Sioux City , IA	361,811	\$ 0.42	\$ 1,519,606

**Appendix G-2**  
**National License Valuation**  
Based upon 2003 Transactions Reported by Verizon Wireless

Market	POPs	Price / MHz POP	Market Value
Hagerstown, MD	360,462	\$ 0.42	\$ 1,513,942
Albany, GA	357,389	\$ 0.42	\$ 1,501,033
Monroe, LA	356,837	\$ 0.42	\$ 1,498,714
Atlantic City, NJ	351,358	\$ 0.42	\$ 1,475,702
Bangor, ME	348,522	\$ 0.42	\$ 1,463,792
Utica, NY	348,296	\$ 0.42	\$ 1,462,844
Elmira, NY	346,542	\$ 0.42	\$ 1,455,476
Green Bay, WI	341,479	\$ 0.42	\$ 1,434,210
Lincoln, NE	340,467	\$ 0.42	\$ 1,429,959
Anderson, SC	335,632	\$ 0.42	\$ 1,409,654
Fargo, ND	327,817	\$ 0.42	\$ 1,376,829
Watertown, NY	325,878	\$ 0.42	\$ 1,368,689
La Crosse, WI	325,346	\$ 0.42	\$ 1,366,453
Longview, TX	321,925	\$ 0.42	\$ 1,352,085
Hickory, NC	321,650	\$ 0.42	\$ 1,350,930
Temple, TX	320,945	\$ 0.42	\$ 1,347,968
Tupelo, MS	320,871	\$ 0.42	\$ 1,347,659
Billings, MT	319,266	\$ 0.42	\$ 1,340,918
Eugene, OR	311,203	\$ 0.42	\$ 1,307,053
Ft Smith, AR	310,406	\$ 0.42	\$ 1,303,704
Alexandria, LA	308,146	\$ 0.42	\$ 1,294,214
Brownsville, TX	305,608	\$ 0.42	\$ 1,283,552
Erie, PA	303,129	\$ 0.42	\$ 1,273,143
Waco, TX	297,057	\$ 0.42	\$ 1,247,640
Tyler, TX	296,738	\$ 0.42	\$ 1,246,300
Provo, UT	296,348	\$ 0.42	\$ 1,244,660
Pueblo, CO	292,601	\$ 0.42	\$ 1,228,925
Houma, LA	290,049	\$ 0.42	\$ 1,218,206
Waterloo, IA	287,110	\$ 0.42	\$ 1,205,862
Cedar Rapids, IA	286,755	\$ 0.42	\$ 1,204,369
Gainesville, FL	286,592	\$ 0.42	\$ 1,203,686
Lake Charles, LA	285,368	\$ 0.42	\$ 1,198,544
Olympia, WA	284,831	\$ 0.42	\$ 1,196,289
Texarkana, TX	281,581	\$ 0.42	\$ 1,182,641
Jackson, TN	280,917	\$ 0.42	\$ 1,179,851
Springfield, IL	280,166	\$ 0.42	\$ 1,176,696
Redding, CA	278,581	\$ 0.42	\$ 1,170,038
Abilene, TX	278,491	\$ 0.42	\$ 1,169,664
Dover, DE	276,383	\$ 0.42	\$ 1,160,807
Lima, OH	274,707	\$ 0.42	\$ 1,153,771
Wilmington, NC	274,682	\$ 0.42	\$ 1,153,665
Decatur, IL	272,369	\$ 0.42	\$ 1,143,949
Lafayette, IN	272,275	\$ 0.42	\$ 1,143,556
Topeka, KS	270,247	\$ 0.42	\$ 1,135,037
Mankato, MN	269,658	\$ 0.42	\$ 1,132,565
St Cloud, MN	268,277	\$ 0.42	\$ 1,126,763
Johnstown, PA	265,372	\$ 0.42	\$ 1,114,561
Olean, NY	263,277	\$ 0.42	\$ 1,105,765
Florence, SC	263,129	\$ 0.42	\$ 1,105,141

**Appendix G-2**  
**National License Valuation**  
Based upon 2003 Transactions Reported by Verizon Wireless

Market	POPs	Price / MHz POP	Market Value
Tuscaloosa, AL	261,710	\$ 0.42	\$ 1,099,181
Terre Haute, IN	260,665	\$ 0.42	\$ 1,094,792
Elkhart, IN	258,667	\$ 0.42	\$ 1,086,402
Rochester, MN	256,484	\$ 0.42	\$ 1,077,232
Battle Creek, MI	250,295	\$ 0.42	\$ 1,051,239
Bowling Green, KY	245,023	\$ 0.42	\$ 1,029,096
Altoona, PA	244,888	\$ 0.42	\$ 1,028,528
Fayetteville, AR	244,779	\$ 0.42	\$ 1,028,070
Champaign, IL	244,543	\$ 0.42	\$ 1,027,081
Lewiston, ME	243,867	\$ 0.42	\$ 1,024,240
Mansfield, OH	243,665	\$ 0.42	\$ 1,023,395
Clarksville, TN	242,516	\$ 0.42	\$ 1,018,567
Wausau, WI	242,066	\$ 0.42	\$ 1,016,677
Wheeling, WV	241,931	\$ 0.42	\$ 1,016,109
Greenville, NC	240,831	\$ 0.42	\$ 1,011,489
Bloomington, IN	239,705	\$ 0.42	\$ 1,006,763
Goldsboro, NC	239,051	\$ 0.42	\$ 1,004,014
San Luis Obispo, CA	238,878	\$ 0.42	\$ 1,003,288
Paducah, KY	238,790	\$ 0.42	\$ 1,002,919
Bloomington, IL	237,375	\$ 0.42	\$ 996,973
Yakima, WA	237,103	\$ 0.42	\$ 995,832
Joplin, MO	236,605	\$ 0.42	\$ 993,739
Janesville, WI	235,961	\$ 0.42	\$ 991,036
Greenville, MS	235,337	\$ 0.42	\$ 988,417
Grand Forks, ND	235,325	\$ 0.42	\$ 988,366
Odessa, TX	234,762	\$ 0.42	\$ 986,000
Dothan, AL	231,248	\$ 0.42	\$ 971,240
Carbondale, IL	230,447	\$ 0.42	\$ 967,876
Wichita Falls, TX	230,273	\$ 0.42	\$ 967,146
Medford, OR	229,942	\$ 0.42	\$ 965,756
Sioux Falls, SD	228,488	\$ 0.42	\$ 959,648
Muskegon, MI	227,671	\$ 0.42	\$ 956,220
Chico, CA	227,610	\$ 0.42	\$ 955,961
Traverse City, MI	225,060	\$ 0.42	\$ 945,252
Hyannis, MA	224,682	\$ 0.42	\$ 943,663
Stevens Point, WI	221,364	\$ 0.42	\$ 929,729
Meridian, MS	220,026	\$ 0.42	\$ 924,111
Rocky Mount, NC	219,226	\$ 0.42	\$ 920,748
Las Cruces, NM	216,883	\$ 0.42	\$ 910,907
Ocala, FL	214,316	\$ 0.42	\$ 900,128
Jackson, MI	212,506	\$ 0.42	\$ 892,524
Merced, CA	211,976	\$ 0.42	\$ 890,297
St Joseph, MO	210,638	\$ 0.42	\$ 884,679
Columbia, MO	209,590	\$ 0.42	\$ 880,276
Clarksburg, WV	209,548	\$ 0.42	\$ 880,101
Idaho Falls, ID	209,294	\$ 0.42	\$ 879,034
Charlottesville, VA	209,141	\$ 0.42	\$ 878,391
Bremerton, WA	208,704	\$ 0.42	\$ 876,557
Sunbury, PA	206,098	\$ 0.42	\$ 865,612

**Appendix G-2**  
**National License Valuation**  
Based upon 2003 Transactions Reported by Verizon Wireless

Market	POPs	Price / MHz POP	Market Value
Grand Junction, CO	205,768	\$ 0.42	\$ 864,226
Jamestown, NY	205,640	\$ 0.42	\$ 863,686
Ft Collins, CO	204,750	\$ 0.42	\$ 859,948
Williamson, WV	204,250	\$ 0.42	\$ 857,851
Kokomo, IN	203,389	\$ 0.42	\$ 854,233
Bluefield, WV	202,422	\$ 0.42	\$ 850,172
Muncie, IN	200,625	\$ 0.42	\$ 842,623
Cape Girardeau, MO	199,975	\$ 0.42	\$ 839,893
Rapid City, SD	199,406	\$ 0.42	\$ 837,504
Eau Claire, WI	198,615	\$ 0.42	\$ 834,183
Parkersburg, WV	198,028	\$ 0.42	\$ 831,716
Anderson, IN	196,689	\$ 0.42	\$ 826,093
Zanesville, OH	195,997	\$ 0.42	\$ 823,187
Lawton, OK	195,613	\$ 0.42	\$ 821,575
Quincy, IL	194,934	\$ 0.42	\$ 818,724
Dubuque, IA	194,196	\$ 0.42	\$ 815,624
Santa Fe, NM	191,979	\$ 0.42	\$ 806,310
Gadsden, AL	191,437	\$ 0.42	\$ 804,037
Florence, AL	190,384	\$ 0.42	\$ 799,611
Ft Walton Beach, FL	188,690	\$ 0.42	\$ 792,496
Panama City, FL	188,315	\$ 0.42	\$ 790,921
Gainesville, GA	187,402	\$ 0.42	\$ 787,086
Lebanon, NH	184,334	\$ 0.25	\$ 460,834
Beckley, WV	183,823	\$ 0.25	\$ 459,558
Wenatchee, WA	183,219	\$ 0.25	\$ 458,048
Columbus, MS	183,057	\$ 0.25	\$ 457,641
Athens, GA	182,633	\$ 0.25	\$ 456,583
Waterville, ME	182,238	\$ 0.25	\$ 455,595
Danville, VA	181,977	\$ 0.25	\$ 454,944
Salisbury, MD	179,347	\$ 0.25	\$ 448,368
Farmington, NM	179,054	\$ 0.25	\$ 447,634
Williamsport, PA	178,196	\$ 0.25	\$ 445,489
Anniston, AL	178,087	\$ 0.25	\$ 445,217
Hattiesburg, MS	178,083	\$ 0.25	\$ 445,209
Benton Harbor, MI	177,516	\$ 0.25	\$ 443,790
Great Falls, MT	177,142	\$ 0.25	\$ 442,855
Jonesboro, AR	175,383	\$ 0.25	\$ 438,457
Owensboro, KY	172,814	\$ 0.25	\$ 432,036
Cumberland, MD	172,378	\$ 0.25	\$ 430,944
San Angelo, TX	171,430	\$ 0.25	\$ 428,574
New Bern, NC	170,451	\$ 0.25	\$ 426,126
Lynchburg, VA	169,947	\$ 0.25	\$ 424,867
Pine Bluff, AR	168,210	\$ 0.25	\$ 420,525
Laredo, TX	168,169	\$ 0.25	\$ 420,423
Pottsville, PA	167,844	\$ 0.25	\$ 419,609
Naples, FL	167,309	\$ 0.25	\$ 418,272
Sherman, TX	167,105	\$ 0.25	\$ 417,764
Walla Walla, WA	166,719	\$ 0.25	\$ 416,798
Bryan, TX	166,098	\$ 0.25	\$ 415,245

**Appendix G-2**  
**National License Valuation**  
Based upon 2003 Transactions Reported by Verizon Wireless

Market	POPs	Price / MHz		Market Value
		POP		
Kenewick, WA	165,036	\$ 0.25	\$	412,591
Vicotria, TX	164,959	\$ 0.25	\$	412,398
Jacksonville, NC	164,822	\$ 0.25	\$	412,055
Sumter, SC	164,476	\$ 0.25	\$	411,191
Las Salle, IL	163,164	\$ 0.25	\$	407,910
Muskogee, OK	163,094	\$ 0.25	\$	407,734
Poplar Bluff, MO	163,064	\$ 0.25	\$	407,660
Clinton, IA	162,779	\$ 0.25	\$	406,948
Findlay, OH	162,275	\$ 0.25	\$	405,688
Lufkin, TX	158,489	\$ 0.25	\$	396,223
Myrtle Beach, SC	158,458	\$ 0.25	\$	396,146
Salina, KS	157,749	\$ 0.25	\$	394,372
Eureka, CA	156,836	\$ 0.25	\$	392,090
Steubenville, OH	156,775	\$ 0.25	\$	391,938
Grand Island, NE	155,695	\$ 0.25	\$	389,238
Jefferson City, MO	155,544	\$ 0.25	\$	388,861
Pittsfield, MA	153,287	\$ 0.25	\$	383,218
Missoula, MT	153,197	\$ 0.25	\$	382,993
Valdosta, GA	153,149	\$ 0.25	\$	382,872
Columbus, IN	153,041	\$ 0.25	\$	382,602
Winchester, VA	151,304	\$ 0.25	\$	378,260
Burlington, IA	151,297	\$ 0.25	\$	378,243
Twin Falls, ID	150,514	\$ 0.25	\$	376,285
Casper, WY	148,689	\$ 0.25	\$	371,723
Sandusky, OH	146,321	\$ 0.25	\$	365,802
Greeley, CO	145,003	\$ 0.25	\$	362,508
Ft Dodge, IA	144,904	\$ 0.25	\$	362,260
Decatur, AL	144,712	\$ 0.25	\$	361,779
Harrisonburg, VA	141,801	\$ 0.25	\$	354,503
Corbin, KY	141,005	\$ 0.25	\$	352,512
Bellingham, WA	140,558	\$ 0.25	\$	351,395
Kankakee, IL	139,746	\$ 0.25	\$	349,366
Hutchinson, KS	137,603	\$ 0.25	\$	344,009
Fredericksburg, VA	137,119	\$ 0.25	\$	342,799
Du Bois, PA	136,598	\$ 0.25	\$	341,495
Opelika, AL	136,424	\$ 0.25	\$	341,061
Athens, OH	136,250	\$ 0.25	\$	340,626
State College, PA	136,165	\$ 0.25	\$	340,412
Wilmar, MN	136,124	\$ 0.25	\$	340,310
Bismark, ND	136,050	\$ 0.25	\$	340,126
Plattsburgh, NY	135,433	\$ 0.25	\$	338,583
Ottumwa, IA	135,287	\$ 0.25	\$	338,217
Manhattan, KS	135,166	\$ 0.25	\$	337,915
Minot, ND	134,956	\$ 0.25	\$	337,389
Yuba City, CA	134,907	\$ 0.25	\$	337,268
Gallup, NM	134,505	\$ 0.25	\$	336,262
Middlesboro, KY	133,339	\$ 0.25	\$	333,347
Sharon, PA	133,103	\$ 0.25	\$	332,758
Hilo, HI	132,349	\$ 0.25	\$	330,872

**Appendix G-2**  
**National License Valuation**  
Based upon 2003 Transactions Reported by Verizon Wireless

Market	POPs	Price / MHz		Market Value
		POP		
Fergus Falls, MN	132,184	\$ 0.25	\$	330,459
Mt Vernon, IL	131,215	\$ 0.25	\$	328,037
Mason City, IA	130,717	\$ 0.25	\$	326,794
Mt Pleasant, MI	130,414	\$ 0.25	\$	326,035
Glens Falls, NY	130,393	\$ 0.25	\$	325,982
Cookeville, TN	129,374	\$ 0.25	\$	323,436
Hot Springs, AR	129,183	\$ 0.25	\$	322,957
Iowa City, IA	127,304	\$ 0.25	\$	318,260
Rome, GA	126,573	\$ 0.25	\$	316,432
Orangeburg, SC	125,904	\$ 0.25	\$	314,760
Danville, IL	125,665	\$ 0.25	\$	314,163
Dyersburg, TN	125,337	\$ 0.25	\$	313,343
Norfolk, NE	123,779	\$ 0.25	\$	309,447
Keene, NH	122,880	\$ 0.25	\$	307,200
Midland, TX	122,724	\$ 0.25	\$	306,809
Somerset, KY	122,636	\$ 0.25	\$	306,589
Lewiston, ID	121,031	\$ 0.25	\$	302,577
El Centro, CA	120,233	\$ 0.25	\$	300,583
Marion, IN	120,162	\$ 0.25	\$	300,405
El Dorado, AR	119,691	\$ 0.25	\$	299,228
East Liverpool, OH	119,104	\$ 0.25	\$	297,759
Burlington, NC	119,034	\$ 0.25	\$	297,586
Oneonta, NY	118,516	\$ 0.25	\$	296,291
Prescott, AZ	118,485	\$ 0.25	\$	296,214
McComb, MS	118,028	\$ 0.25	\$	295,070
Michigan City, IN	117,773	\$ 0.25	\$	294,432
Yuma, AZ	117,585	\$ 0.25	\$	293,961
Oil City, PA	116,470	\$ 0.25	\$	291,176
Richmond, IN	115,436	\$ 0.25	\$	288,591
Morgantown, WV	115,001	\$ 0.25	\$	287,502
Cheyenne, WY	114,333	\$ 0.25	\$	285,832
Sheboygan WI	114,265	\$ 0.25	\$	285,662
Bend, OR	113,020	\$ 0.25	\$	282,549
Scottsbluff, NE	112,149	\$ 0.25	\$	280,374
Eagle Pass, TX	110,894	\$ 0.25	\$	277,236
Kahului, HI	110,554	\$ 0.25	\$	276,386
Staunton, VA	110,354	\$ 0.25	\$	275,886
Ashtabula, OH	109,803	\$ 0.25	\$	274,508
Waycross, GA	108,937	\$ 0.25	\$	272,344
Dalton, GA	108,470	\$ 0.25	\$	271,175
Rolla, MO	108,056	\$ 0.25	\$	270,141
Rutland, VT	107,786	\$ 0.25	\$	269,464
Sierra Vista, AZ	107,386	\$ 0.25	\$	268,466
Worthington, MN	106,262	\$ 0.25	\$	265,656
Flagstaff, AZ	106,250	\$ 0.25	\$	265,625
New Castle, PA	105,871	\$ 0.25	\$	264,677
Stroudsburg, PA	105,280	\$ 0.25	\$	263,200
Hammond, LA	105,141	\$ 0.25	\$	262,853
Roseburg, OR	104,114	\$ 0.25	\$	260,285

**Appendix G-2**  
**National License Valuation**  
Based upon 2003 Transactions Reported by Verizon Wireless

Market	POPs	Price / MHz POP	Market Value
Ithaca, NY	103,507	\$ 0.25	\$ 258,767
Vincennes, IN	103,134	\$ 0.25	\$ 257,835
Chillicothe, OH	102,937	\$ 0.25	\$ 257,342
Portsmouth, OH	102,692	\$ 0.25	\$ 256,729
Fairbanks, AK	101,322	\$ 0.25	\$ 253,305
Marion, OH	101,225	\$ 0.25	\$ 253,063
Adrian, MI	100,624	\$ 0.25	\$ 251,559
Pittsburg, KS	100,027	\$ 0.25	\$ 250,069
Martinsville, VA	99,635	\$ 0.25	\$ 249,087
Fond du Lac, WI	99,091	\$ 0.25	\$ 247,728
Indiana, PA	98,993	\$ 0.25	\$ 247,484
Pocatello, ID	98,616	\$ 0.25	\$ 246,540
Paris, TX	98,364	\$ 0.25	\$ 245,911
Cleveland, TN	96,091	\$ 0.25	\$ 240,226
Presque Isle, ME	95,630	\$ 0.25	\$ 239,074
Meadville, PA	94,786	\$ 0.25	\$ 236,965
Enid, OK	94,598	\$ 0.25	\$ 236,495
Petoskey, MI	94,449	\$ 0.25	\$ 236,123
Longview, WA	93,991	\$ 0.25	\$ 234,977
Mitchell, SD	92,505	\$ 0.25	\$ 231,261
Ardmore, OK	92,377	\$ 0.25	\$ 230,942
St George, UT	91,589	\$ 0.25	\$ 228,973
Aberdeen, WA	91,363	\$ 0.25	\$ 228,407
Russellville, AR	90,049	\$ 0.25	\$ 225,123
Lawrence, KS	89,978	\$ 0.25	\$ 224,945
Aberdeen, SD	89,905	\$ 0.25	\$ 224,763
Manitowoc, WI	88,463	\$ 0.25	\$ 221,158
North Platte, NE	88,274	\$ 0.25	\$ 220,685
Marquette, MI	87,845	\$ 0.25	\$ 219,612
Sedalia, MO	87,676	\$ 0.25	\$ 219,189
Coos Bay, OR	87,560	\$ 0.25	\$ 218,900
Blytheville, AR	87,391	\$ 0.25	\$ 218,477
Logan, UT	87,357	\$ 0.25	\$ 218,391
Laurel, MS	87,060	\$ 0.25	\$ 217,649
Brainerd, MN	86,312	\$ 0.25	\$ 215,779
Port Angeles, WA	84,271	\$ 0.25	\$ 210,678
Roanoke Rapids, NC	83,945	\$ 0.25	\$ 209,864
Galesburg, IL	83,131	\$ 0.25	\$ 207,829
Klamath Falls, OR	82,023	\$ 0.25	\$ 205,057
Watertown, SD	82,011	\$ 0.25	\$ 205,026
Harrison, AR	81,905	\$ 0.25	\$ 204,762
Selma, AL	81,903	\$ 0.25	\$ 204,757
Natchez, MS	80,535	\$ 0.25	\$ 201,339
Hastings, NE	80,116	\$ 0.25	\$ 200,291
Stillwater, OK	79,807	\$ 0.25	\$ 199,518
Brunswick, GA	78,243	\$ 0.25	\$ 195,608
Clovis, NM	78,126	\$ 0.25	\$ 195,316
Jacksonville, IL	77,875	\$ 0.25	\$ 194,686
Roswell, NM	77,075	\$ 0.25	\$ 192,687



**Appendix G-2**  
**National License Valuation**  
Based upon 2003 Transactions Reported by Verizon Wireless

Market	POPs	Price / MHz POP	Market Value
Juneau, AK	75,888	\$ 0.25	\$ 189,720
Greenwood, SC	75,279	\$ 0.25	\$ 188,196
West Plains, MO	73,882	\$ 0.25	\$ 184,704
Marinette, WI	72,015	\$ 0.25	\$ 180,037
Butte, MT	71,777	\$ 0.25	\$ 179,443
Bozeman, MT	71,585	\$ 0.25	\$ 178,962
Garden City, KS	71,565	\$ 0.25	\$ 178,912
La Grange, GA	70,580	\$ 0.25	\$ 176,451
Coffeyville, KS	69,854	\$ 0.25	\$ 174,636
Alpena, MI	69,772	\$ 0.25	\$ 174,430
Mattoon, IL	68,545	\$ 0.25	\$ 171,364
Hays, KS	67,019	\$ 0.25	\$ 167,547
Vicksburg, MS	65,175	\$ 0.25	\$ 162,938
Kalispell, MT	65,140	\$ 0.25	\$ 162,850
Helena, MT	64,627	\$ 0.25	\$ 161,568
Brownwood, TX	63,452	\$ 0.25	\$ 158,631
Bemidji, MN	63,395	\$ 0.25	\$ 158,488
Fairmont, WV	62,974	\$ 0.25	\$ 157,435
Rock Springs, WY	62,679	\$ 0.25	\$ 156,698
Hobbs, NM	61,342	\$ 0.25	\$ 153,354
Marshalltown, IA	61,265	\$ 0.25	\$ 153,161
Kirksville, MO	61,119	\$ 0.25	\$ 152,798
Liberal, KS	59,356	\$ 0.25	\$ 148,390
Huron, SD	58,508	\$ 0.25	\$ 146,270
Ada, OK	57,945	\$ 0.25	\$ 144,862
Lihue, HI	56,295	\$ 0.25	\$ 140,737
Sault Ste. Marie, MI	56,145	\$ 0.25	\$ 140,363
McAlester, OK	56,005	\$ 0.25	\$ 140,014
Carlsbad, NM	53,466	\$ 0.25	\$ 133,664
Bartlesville, OK	52,873	\$ 0.25	\$ 132,182
Ponca City, OK	52,862	\$ 0.25	\$ 132,154
Riverton, WY	51,545	\$ 0.25	\$ 128,862
Emporia, KS	50,773	\$ 0.25	\$ 126,932
Madisonville, KY	50,739	\$ 0.25	\$ 126,847
Escanaba, MI	50,690	\$ 0.25	\$ 126,726
Houghton, MI	49,611	\$ 0.25	\$ 124,028
Iron Mountain, MI	49,056	\$ 0.25	\$ 122,639
Logan, WV	47,335	\$ 0.25	\$ 118,338
Great Bend, KS	44,857	\$ 0.25	\$ 112,142
Dickinson, ND	41,801	\$ 0.25	\$ 104,503
Dodge City, KS	41,199	\$ 0.25	\$ 102,999
McCook, NE	40,280	\$ 0.25	\$ 100,700
Big Spring, TX	38,048	\$ 0.25	\$ 95,120
Ironwood, MI	36,365	\$ 0.25	\$ 90,912
Nogales, AZ	32,644	\$ 0.25	\$ 81,609
Williston, ND	30,263	\$ 0.25	\$ 75,658

<b>Total</b>	<b><u>279,913,024</u></b>	<b><u>\$ 3,535,117,368</u></b>
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